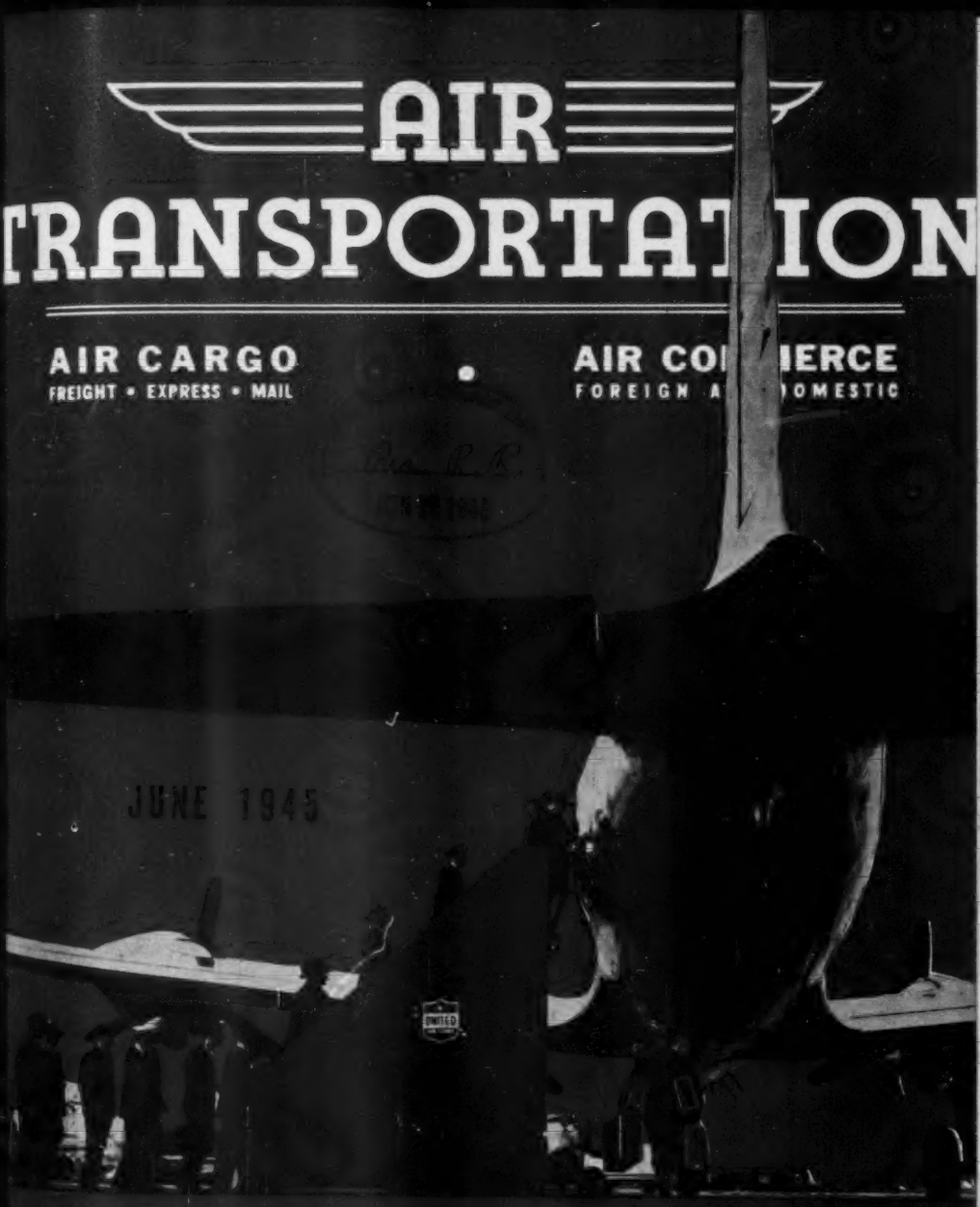
# AIR TRANSPORTATION

**AIR CARGO**
FREIGHT • EXPRESS • MAIL

•

**AIR COMMERCE**
FOREIGN AND DOMESTIC




AIR MAIL • PASSENGERS • AIR EXPRESS

Fast, Dependable, Daily Service to

## SOUTH AMERICA*

For shipping details phone Railway Express Agency, Air Express Division. For passenger information consult any Air Ticket Office or any office of Pan American Airways System.

Panagra

PAN AMERICAN GRACE AIRWAYS
CHRYSLER BUILDING, NEW YORK

PAN AMERICA GRACE

*Connecting with Pan American Airways at Balboa, C. Z., Cali, Colombia; Corumba, Brazil, and Buenos Aires, Argentina

# "WE GOT 'EM"

"We came at them out of the sun—peeled off, gave them the works and were upstairs again in a jiffy. Boy, that Allison's an engine!" ★ Praise like that comes from deep down in a pilot's heart! Dependability like that supports his confidence, his daring and his ability to win battles. It's another reason why more than 65,000 Allison engines have been supplied to our fighter pilots on all fronts. ★ And when peace comes, Allison's war-proved dependability will contribute to the fine flying qualities of planes in which you'll ride.

**POWERED BY ALLISON**

*P-38—Lightning*
*P-39—Airacobra*
*P-40—Warhawk*
*A-36 and P-51A—Mustang*
*P-63—Kingcobra*

*Allison already has furnished more than 85,000,000 H.P. for use in these planes.*

**LIQUID-COOLED AIRCRAFT ENGINES**

*Allison*

DIVISION OF GENERAL MOTORS

Indianapolis, Indiana

*Every Sunday Afternoon—*
GENERAL MOTORS SYMPHONY OF THE AIR—*NBC Network*

# ANSWERS TO THE AXIS

America's tremendous capacity for production has provided the answers to the Axis. It has been the job of DADE BROTHERS, Inc., to make certain those answers were delivered. We are proud indeed of our part in this war of production and transportation.

What we have done for Uncle Sam, we shall be ready to do for you, once Victory is won.

- Pioneers in Processing Planes and Materials for Export
- Manufacturers of Glider Wings
- Air Cargo Consultants
- Originators of "Eronel" liquid spray plastic for packaging airplanes and air cargo
- Foremost fleet of specially equipped trucks for transportation of aircraft and aircraft parts
- Specialists in handling of crack-ups
- Manufacturers of "ERONEL" Thermo Dip a protective plastic coating for spare parts.

DADE BROTHERS INC.

## *DADE BROTHERS, Inc.*

CARGO ENGINEERS, LAND . . . SEA . . . AIR

HEADQUARTERS AT MINEOLA, N. Y. • BRANCHES THROUGHOUT THE U.S.

# GUIA

*Established 1904*

***For more than forty years GUIA has been a part of the great expansion of American export trade***

The greater coverage of the leaders in Industry, Government, Transportation and Commerce is an important asset to American manufacturers who want their sales message to reach the men who specify and buy the material and equipment required in the expansion of Latin America.

If you are going to need increased export sales, GUIA offers many advantages. You can be sure that your sales story reaches your best potential customers each month. The circulation is not rotated and there is no chance that your most important prospects are omitted for any reason whatever.

GUIA brings definite, tangible, traceable results to its advertisers.

**GUIA**
DE IMPORTADORES
**42** ND YEAR

*Copy of Guia with full details sent upon request.*

DE INDUSTRIAS AMERICANAS • GUIDE TO AMERICAN INDUSTRY

J. E. Sitterley & Sons, Inc., Publishers,
440 Fourth Ave., New York 16, N. Y.

CHARTER CCA MEMBER

VOL. 6
No. 6

AIR TRANSPORTATION

56 CENTS A COPY • $5.00 A YEAR

JUNE
1945

## FEATURE ARTICLES

**Aviation and Civilization (First Instalment)** ..... 7
*By* THEODORE PAUL WRIGHT

**100,000 Miles an Hour!** ..... 23
*By* HALL K. HIBBARD

**John Bull Gets Busy** ..... 36
*By* DE WITT RHODES

**Economic Factors in Rate-Making** ..... 54
*By* W. DELANEY DILWORTH

## NEWS FEATURES

**Packaging for Global Shipments** ..... 20
*Winning the battle against corrosion*

**Brooklyn Air-Bus-Rail Terminal** ..... 50
*John F. Budd proposes a terminal on a grand scale*

**Fast Work for Frisco** ..... 56
*How the Peace Conference was aided by Air Express*

**Case Histories of Express-by-Air** ..... 58
*The proof of the pudding*

**'Chute the Works** ..... 33
*Picture story of the Manhattan-Switlik air cargo drops*

## NEWS

*New C & S Route* ..... 31
*1944 Safety Awards* ..... 32
*Dennis H. Handover Interviewed* ..... 47
*New York-India Daily Schedule* ..... 48
*New Iced Containers* ..... 55
*Air-Expressed Papers Benefited* ..... 59

## DEPARTMENTS

*Airportation News* ..... 32
*Airdom* ..... 40
*By Richard Malkin*
*It's An Air World* ..... 52
*By L. A. Goldsmith*
*Short Take-Offs* ..... 60
*A. T. Congratulates* ..... 61
*Air Commerce* ..... 66

***THE COVER—A sleek transport waits patiently as it takes on a load of passengers and cargo. Such scenes have become commonplace throughout the world. The plane is a United Air Lines four-motored craft—postwar edition.***

JOHN F. BUDD, *Editor and Publisher*

Copyright 1945, Import Publications, Inc.

*Publishers of* CUSTOM HOUSE GUIDE
*and* AMERICAN
IMPORT & EXPORT BULLETIN

*Publication Office:*
Ten Bridge St., New York 4, N. Y.
*Phone:* WHitehall 4-2898

*Business Manager:* B. L. WEST
*Managing Editor:* RICHARD MALKIN

*Mid-West Representatives:*
WYATT MACGAFFEY and F. R. JONES
228 North LaSalle St., Chicago, Ill.
*Phone:* STate 5096

*Pacific Coast Representative:*
ROBERT H. DEIBLER & ASSOCIATES
403 West Eighth St., Los Angeles 14, Calif.
*Phone:* TUcker 1579

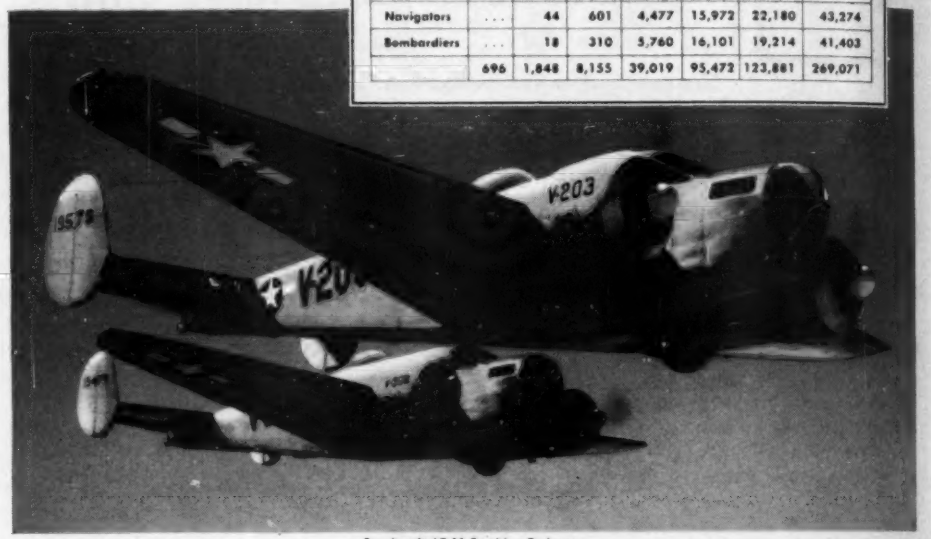
*All Rights Reserved • Printed in U. S. A.*
No part may be reprinted in any form without written permission

# "Payoff"

**Output of AAF Training Command Courses***

(Successfully Completed)

| | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | Total 1939-44 |
|---|---|---|---|---|---|---|---|
| Pilots | 696 | 1,786 | 7,244 | 28,782 | 63,399 | 82,487 | 184,394 |
| Navigators | .... | 44 | 601 | 4,477 | 15,972 | 22,180 | 43,274 |
| Bombardiers | .... | 18 | 310 | 5,760 | 16,101 | 19,214 | 41,403 |
| | 696 | 1,848 | 8,155 | 39,019 | 95,472 | 123,881 | 269,071 |



Beechcraft AT-11 Bombing Trainers

*"Here is the classroom of the navigation cadet, a silver twin-engine Beechcraft AT-7. These powerful trainers carry a team of five. They cruise for hundreds of miles on practice navigation flights from AAF Navigation School, Hondo, Tex., world's largest navigation school." (*Official AAF release)

Mass production of the world's most highly skilled aircrews and technicians has been the job of the Army Air Forces Training Command for six years. How well that job was done is summarized in the table above. *The "Payoff" is told in the daily news of victories won by our fighting men on all fronts* . . . victories made possible through our supremacy in the air.

Almost all of the Army Air Forces navigators and bombardiers, and a large portion of multi-engine pilots, received their advanced training in twin-engine Beechcrafts. The outstanding service record made by thousands of these Beechcrafts in the gruelling routine of fast-paced training operations is a forecast of the freedom from trouble and expense which owners of postwar commercial Beechcrafts may rightfully expect. Meanwhile, all facilities of Beech Aircraft continue 100% on production of Beechcrafts and A-26 Invader wings for the armed forces until the realization of complete Victory.

Beech Aircraft CORPORATION

BEECHCRAFTS ARE DOING THEIR PART — WICHITA, KANSAS, U. S. A.

# AVIATION AND CIVILIZATION

By THEODORE PAUL WRIGHT
*Administrator of Civil Aeronautics*
*United States Department of Commerce*

**(FIRST INSTALMENT)**

AVIATION'S place in civilization is my subject. It was with considerable trepidation that I made the selection of such an ambitious topic, but I felt compelled to tackle this subject, perhaps impelled by reflections during many years on the need for appraising the implications, for good or ill, that my chosen profession possesses in the general scheme of things. As we approach victory in this greatest of wars, the need becomes more pressing. I ask the indulgence of my readers in presenting a little personal history, as only by so doing can they share with me my speculations on the need for universal reappraisal of the fundamental import of aviation.

I started out as an officer in naval aviation in World War I. After the war there followed a period of designing, engineering and manufacturing of aircraft. The objective of these labors, except for brief excursions in the racing field and some consideration of civil aircraft in the late 1920s, was the production of military aircraft—of war machines. This did not seem to me then to be a very worthy direction of effort. *Could not the airplane serve humanity better?*

Next, I entered an intensively interesting field as engineering executive, a position that afforded occasion for travel. My first trip to Europe was in 1934, at which time I had my initial opportunity of visiting many of England's aircraft factories and becoming acquainted with many people in the country's industry. Aviation was then a small industry with such production as there was, concentrated on military aircraft; but strangely enough, and significantly, I sensed that the fundamental interest, as in America, was on the civil side. How we all enjoyed the King's Cup Races in those days!

Then, in 1936, I went to Germany and had my eyes opened; saw production of military aircraft in numbers many times the combined output of the United States and United Kingdom, and, very obviously, not intended for national defense, but for aggressive war. As no force-implemented League of Nations or other effective medium of collective security existed, I was regretfully forced to accept the fact that the democracies, having already lost the peace that followed the First World War, must, if they were to survive, prepare intensively for the Second. Our potential enemies had selected the weapon; their strength was great and time was short.

In 1938, just after Munich, I was honored by a request to read a lecture in England

on *American Methods of Aircraft Production.* This, and a talk at a dinner which followed, gave opportunity to reiterate the warnings of German strength and intentions as they appeared to me, and the need to share the burden of meeting the threat. The war came—Europe was overrun—and England stood alone. With a handful of *Spitfires* and *Hurricanes* (of surpassing excellence), with the "few" of outstanding courage and determination, and with a leader of indomitable will, backed by the people of England who wouldn't be beaten, civilization was saved.

In the United States, President Roosevelt announced his aircraft production expansion program and set it at a high enough level to test our abilities to the limit. I moved to Washington in 1940 to contribute, as a public servant, all I could to the achievement of our production objectives.

In the fall of 1942 I had an opportunity to visit Britain again; this time was a production mission of American aircraft manufacturers. How greatly we were impressed with all that we saw: the country's production effectiveness, its spirit, its determination in the face of almost unbearable hardships! Again a few years ago, I flew the Atlantic, this time on a military technical mission whose objective (our aircraft production battle having been won), was freely to discuss with British technical people those developments on which we were each working, and thereby to assist each other to improve the "breed" of our aircraft so as to hasten victory. By last fall, the state of the war made it seem appropriate, though I fear it proved to be premature, to accept a post in the field in which I am sure we all had longed to participate—civil aviation.

My only object in reciting this all too personal story is to emphasize the desire which I have had, and am sure the vast majority have, of seeing the airplane so utilized as to make it a positive force in the progress of civilization.

In the remainder of this article I shall attempt to appraise these possibilities, to analyze the airplane's potential for good, and to draw such conclusions as appear warranted. For convenience in visualizing the plan, there follows a brief outline of the topics discussed:

1. The Problem.
2. The Scientific Approach.
3. Historical Aspects of Transportation
4. Military Aviation and War.
5. Technical Development.
6. Government and Civil Aviation.
7. Fields of Usefulness for Aircraft.
   a. *Economic Uses*
   b. *Transportation*
   c. *Communications*
   d. *Cultural Considerations*
   e. *The International Field*
8. The International Civil Aviation Conference at Chicago.
9. Collective Security.
10. Conclusions.

## 1—THE PROBLEM

Let us first define the terms in our subject. Aviation, of course, is the art of flying. Civilization is a condition of human communities, characterized by political and social organization and order; advancement in knowledge, refinement and the arts; and continuous progress in the realization of social, cultural

### The Author

Theodore Paul Wright is a native of Galesburg, Illinois, where he was born a half-century ago. He has a B.S. degree from Lombard College in Galesburg and another in architectural engineering from the Massachusetts Institute of Technology. Mr. Wright also boasts an honorary Doctor of Science degree from Knox College, Galesburg, in recognition of his "distinguished service in aeronautics."

After serving with the Navy as Superintendent of Construction of Naval Aircraft for the New York District during the latter part of the first World War, he became connected with the Curtiss Aeroplane and Motor Company as executive engineer. He progressively held the positions of assistant factory manager, assistant chief engineer, and chief engineer of the airplane division. Under his supervision as chief engineer many famous designs were turned out. Among them were the prize-winning Pulitzer and Snyder Cup racers, and such famous military aircraft as the *Hawk, Falcon, Helldiver, Shrike,* and the *Condor;* also such commercial types as the *Robin, Fledgling, Kingbird,* and *Commercial Condor.* These were followed by the *Tanager,* which won the Guggenheim Safe Aircraft Competition for Curtiss. Mr. Wright's paper, *Tanager—A Safe Airplane,* won for him the Society of Automotive Engineers' coveted Wright Brothers medal.

Fourteen years ago Mr. Wright was placed in charge of combined operations as vice president and general manager. In 1937 he was elected the vice president of the parent Curtiss-Wright Corporation, to fill that post in addition to his duties as director of engineering.

Six months after Pearl Harbor, Mr. Wright was called to Washington to serve with the advisory committee for the Council of National Defense. He returned to Curtiss-Wright, but in February of the following year he was recalled at the request of Lieutenant General William Knudsen, to act as assistant chief of the Aircraft Branch of the Office of Production Management, later the WPB.

In March, 1943, this branch was reorganized and became the Aircraft Resources Control Office of the Aircraft Production Board, with Mr. Wright as director. Last year he attained the post of Administrator of the Civil Aeronautics. Mr. Wright has contributed widely to the literature of aircraft manufacturing, engineering and design. His articles have been published in numerous magazines.

PLAN NOW FOR RECONVERSION WITH
FAST, DEPENDABLE, TIME-SAVING

# "CARGOLINER SERVICE"

*United Cargoliners*—fast transport planes devoted solely to air cargo service—operate night and day on regular schedules from coast-to-coast.

*United Cargoliners* have flown machinery and parts . . . wearing apparel . . . perishables . . . new products . . . newspaper mats and plates overnight between seaboards.

*United Cargoliners* can play an important part in *your* postwar trade. You can get going *faster* in markets . . . minimize warehousing costs . . . reduce inventories . . . speed timely new products to major key centers at low cost.

*Complete information on how you can plan now for your postwar business. Write Air Cargo, United Air Lines, 5959 So. Cicero Ave., Chicago 38, Ill.*

and religious values. The problem which we must see and really appreciate exists is, therefore: can we so manage aviation that it will contribute to the development of civilization?

Perhaps the problem as I have envisaged it can be better seen by describing the alternative titles of this article which I had considered, depending on the degree of pessimism or optimism that I had at a particular time. One was *Aviation and the Neanderthal Man.* Can the old savage be trusted with the tools which he has created? Has man the capacity to catch up with his own machines? Must the chief use of the airplane be to destroy life and property on an ever-increasing scale as its development accelerates, or can these employments be controlled and the many potential uses that it possesses for the advancement of civilization be made to predominate?

**In our estimation, this article is one of the most important in recent aviation literature. Here is not an hysterical approach to the all-important problem of aviation's close relationship to civilization, but a calm, lucid, reasoning progression of thought, fact, and opinion. This is as timely as this afternoon's headlines.**

Now, as never before, we need creative intelligence — knowledge conscientiously applied to our problem—the same kind of fearless engineering in the social and international fields that in the realm of physical science has pushed out the boundaries of human understanding so widely. For without such creative intelligence and determination to take whatever steps are necessary, regardless of sacrifices involved, man, like the brontosaurs of the Triassic Period, that developed a protective armour so heavy that they bogged themselves in the mud and disappeared, will become mired by the weight of his own inventions.

And now another alternative title considered when in more optimistic mood: *Aviation—A Benevolent Spiral.* I clung to this for some time, as it represents my real feeling that aviation is destined to be a good thing for mankind. My text for this would have led off by one of my favorite quotations, for which we are indebted to William Henson, an Englishman, whose patent covering his invention of an "aerial steam carriage" in 1843 depicts an arrangement of wings, controls, and power plant, extraordinarily modern in configuration. Just over 100 years ago Henson said:

"The changes which must follow the first aerial voyage of 100 miles in length must be great, may be astounding to our present notions, *may be dashed as all human advances are with subtractive evils,* but they must be *largely beneficial to the human family.* It is no considerable earnest of future good that the very nature of the design compels us to consider all *mankind as one community.* When men are strangers, they are ready to become enemies; render them mutually acquainted, and they soon become mutually useful; and when their interests are at stake, we may safely reckon on their continued and abiding friendship."

Our problem is to see that the "subtractive evils" are transitory and incidental and that the principal of these (use as an agent of unparalleled destructiveness) does not represent the main objective of this art of aviation in which we are engaged. The problem is very real.

## 2—THE SCIENTIFIC APPROACH

The tremendous advances of modern science and technology are based on the inductive approach, from fact to principle. In

PROBLEM FOR THE FUTURE—"Can the old savage be trusted with the tools he has created?" asks Mr. Wright. "Has man the capacity to catch up with his own machines? Must the chief use of the airplane be to destroy life and property on an ever-increasing scale as its development accelerates . . .?"

simplest form we may state our present problem as the attainment of ability to apply the scientific approach to science itself; the ability to develop technical improvement toward desirable ends; to direct our machines to useful purposes. The scientist and engineer, above all others, must reflect upon the social import of his findings. A science of society would appraise the determinations of each of the physical, mathematical, biological and social sciences as themselves facts to be correlated in a system and formulated into laws and principles of civilization. As examples of what is meant, some considerations derived from history that possibly could be so assembled, classified, correlated and formulated are cited:

The frontier community wherein every man protects himself and is "quick on the trigger" has been brought from the chaotic state by the introduction of law, backed by policing authority.

States armed individually and competitively in the name of national defense, eventually had gotten into war.

A league of States itself unarmed in policing weapons has been powerless to forestall individual national rearmament and to prevent war. *(Possibly from these and other facts it could be established that a group of nations united in peaceful purpose and collectively possessing a police force of sufficient speed and mobility could prevent wars.)*

Again, on the economic side, history shows that attempts at national self-sufficiency, prestige subsidies, and tariff walls have built up depressing influences elsewhere in the world that have led to wars. Overemphasis upon the sovereign right of States, with attendant unwillingness to sacrifice anything for the common worldwide good, has forestalled the formation of effective international organization that might have been successful in maintaining world order. *(Possibly overemphasis of nationalism and sovereign rights is inimical to the peace and prosperity of nations.)*

## Bibliography


1. *International Air Transport and National Policy*—Oliver J. Lissitzyn
2. *The Old Savage in the New Civilization*—Raymond B. Fosdick
3. *Civil Aviation and Peace*—J. Parker Van Zandt
4. *Economic Implications of Aircraft* Caroline and Walter Isard
5. *A Study of War*—Quincy Wright
6. *Security and World Organization*—Fourth Report of Commission to Study the Organization of Peace
7. *The Chicago Air Conference (Foreign Affairs)*—Edward Warner
8. *Postwar Status of the Aircraft Industry (Harvard Business Review)*—William A. M. Burden
9. *Make Your Own World (Fortune)*—Susanne K. Langer
10. *Wings for Transportation* (Franklin Institute Lecture)—Theodore P. Wright
11. *Transportation and National Policy*—J. Parker Van Zandt
12. *Thirty-first Wilbur Wright Memorial Lecture*—Edward Warner
13. *Speech on Civil Aviation in the House of Lords*, January 16, 1945—Lord Swinton


It has often been thought untenable to hold that different nationalities could fight together effectively, and yet the present war, where joint commands and operations have been the rule rather than the exception, have disproved the assumption.

Geographical isolation has heretofore been considered effective in keeping certain nations away from war, but today the worldwide interdependence of nations accentuated by the Machine Age has made reliance upon such isolation a thing of the past. The airplane binds all states even closer together. *(Possibly an international air po-*

FIRST PORT OF CALL FOR THE WORLD'S AIR TRANSPORTS . . .
Sheraton Hotel
E. CURRY DUGAN, General Manager
Just 5 minutes from Newark Airport
15 HILL ST., opp. City Hall NEWARK 1, N. J.

QUOTED BY WRIGHT—The author cites Dr. J. Parker Van Zandt's excellent book, CIVIL AVIATION AND PEACE. Dr. Van Zandt (shown here) is no stranger to the pages of AIR TRANSPORTATION.

*lice force, as long advocated by the late Lord Davis will work.)*

Advancement in the physical sciences has surely far outstripped our ability to cope with government problems, with social problems, with international problems and with economic problems. The thought is pointedly stated by Susanne Langer in an article, *Make Your Own World:*

**"The use of technology has changed the character of war from combat between men to a gigantic conflict among destructive machines. And this change coincided with another, also due to technology—the unification of the whole world into one economic nexus, one concert of nations (which used to comprise only Europe), and one vast theatre of war. Consequently when hostilities are going on there is no hinterland where the arts of peace are preserved. . . .**

**"In a world that is, de facto, a community of nations, the claim of each national state to sovereignty, or unbridled freedom, is as fantastic as the proposal of our political anarchists to dispense with civil law. Anarchy has never been seriously tried in any large community of men. Its most probable results . . . are just too probable. Yet in the community of nations it is the prevailing system . . . and its actual results are exactly what one could expect."**

Civilization has been threatened twice in a generation. It is certainly worth the effort as a measure of self-preservation to apply the scientific approach to a study of the interrelation of these basic sciences, now, as failure to do so may next time be fatal.

In this discussion I am assuming that the prime desideratum is to progress to a world-wide state of law and order, the antithesis of chaos and war. As J. Parker Van Zandt puts it in his inspiring book, *Civil Aviation and Peace:*

**"Two world wars in one generation have taught us that the absolute essential, the sine qua non of human well-being and progress, is freedom from recurrent and increasingly destructive wars."**

It is, I feel, necessary constantly to hold before us a desirable goal and to subordinate other considerations to it, else we will surely lose sight of it, particularly now and later as the present war recedes in point of time. Not only must we individually have such an objective in view, but we must, even at the risk of being given the stigma of "dreamer," proclaim our ideal. Without dreamers and idealists little is accomplished, as the dreams of today are always the realities of tomorrow! This does not, of course, absolve us from the duty continually to reexamine our goals with increasing knowledge and widening horizons. We must be progressive in ends no less than in means.

The speed of scientific advancement today makes immediate consideration of this problem imperative. But ideals alone are not enough—suitable tools are also needed. And here I bring in the airplane as a major tool of progress, capable of bringing the peoples of the world closer together and in furnishing the primary policing medium for a collective security system. Aviation can be a force for good, though not automatically so. To the people of Europe and China, whose chief knowledge of the airplane has been a drone and then an explosion, there will be reluctance to think of aircraft in that light. Yet I must proceed on that premise and state that although the impact of the Air Age is great, it will be good and will make for ultimate world order.

## 3—HISTORICAL ASPECTS OF TRANSPORTATION

Aviation is a means of rapid transportation, whether used to move mail, express, goods, or bombs on the one hand, or people on the other. Also, a slightly different connotation, it is a method for securing fast communications when transporting mail or persons.

Truly it has been said that "the very pace of life depends upon the speed with which matter can be converted into energy available for transportation." Advancements have been

# TWO WEEKS abroad will take on a new meaning!

POST-WAR
SUN. MON. TUE. WED. THU. FRI. SAT
1
2 3 4 5 6 7 8
9 10 11 12 13 14 15
16
Less than 30 hrs. used up in transit—
14 DAYS IN EUROPE
PRE-WAR
SUN. MON. TUE. WED. THU. FRI. SAT.
7 8
9 10
16
12 days used up in transit—
only 4 DAYS IN EUROPE

***What were the barriers to foreign travel by Americans before the war?***

MAINLY TWO: lack of time and lack of money . . . If one wanted to go to Europe on a two weeks' vacation, only 4 days out of 16 were left for sightseeing. Herein lies the post-war importance of Pan American's proposed post-war plan for 300-mile-an-hour, time-saving Clippers with fares at unprecedentedly low costs.

For Easterners, less than 30 hours will be used up in traveling to Europe and back, out of a two weeks' vacation . . . Less than 48 hours will be used up in traveling to South America, Hawaii or Alaska and back, *no matter in what part of the United States you live*. Thus, for the average man and woman in this country, two weeks' vacation abroad will take on a completely new meaning, once we win this war.

•

Giant, 200-passenger Clippers will bring post-war fares within reach of the average man and woman.

**PAN AMERICAN** PAA **WORLD AIRWAYS**
*The System of the Flying Clippers*

rapid as each new discovery speeded up the transportation means. Starting in the Stone Age with "leg" power at about three miles per hour, man progressed to the sledge, the pack animal, the roller, the wheel (a truly great stride), the boat (sail, then steam), the steam train, the automobile, and finally in our time to the transport aircraft possessing cruising speeds of approximately 300 miles per hour, and with much more in prospect. Perhaps the rocket, with velocities greater than that of sound, should be cited as a more distant step having possibilities of useful applications. Modern civilization rests upon man-made means of transportation and communication; without such means modern States could not exist.

Man being a social animal, human society is based upon communication among its members. The unity of any large group can be preserved only through the institution of long-distance communication, whether by human messenger, by signal bonfire, by airplane, or by radio. The extent of the group depends on the speed of communicating means. With the advent of the airplane and radio it logically becomes worldwide. Similarly, the maintenance and increase of the economic strength of a group soon becomes dependent upon long-distance transportation. Here again the airplane makes grouping on a worldwide basis feasible.

Air transport is simply transportation principally characterized by speed and a complete independence of surface conditions. *Giving a present four-to-one superiority in time-saving over long-distance rail travel and a seven-to-one superiority over water transportation, the magnitude of the step taken is apparent; its importance cannot be overestimated.* A final characteristic of air transport that distinguishes it sharply from other means is vertical separation, the ability to use the third dimension to great advantage in a number of ways for a variety of purposes.

## 4—MILITARY AVIATION AND WAR

Although possibly military aviation can be said to have started in 1870 when free balloons were used during the siege of Paris, it was not until the First World War that it became of substantial importance. First uses were for observation purposes, the airplanes being frequently referred to then as the "eyes of the Army." Then counter measures in the form of fighter planes brought the "dog fight" of World War I into prominence. The role of the bomber was relatively minor.

In World War II air power has taken a position of equal importance with other service arms. In some respects the importance is greater, although any attempt to appraise relative roles of the air, land, and sea arms is misleading, as it has been proved time and time again that their coordinated use is in most instances essential.

Possibly the most significant aspect of military aviation in this war is the predominant role of the bomber. Branching off into two fields, one strategic bombing, in which the potential of the enemy to make war is reduced by the destruction of his factories, power sources, oil reserves and cities; and the other, tactical bombing, in which direct cooperation with ground forces is usually implied; we find in each most tremendous developments. The strategic bomber has evolved from the lumbering "crates" of the last war to the present sleek, long-range dreadnaughts of the air, typified by the *Superfortress.* Bomb loads have increased from measurements in pounds to measurements in tons, with individual bomb weights scaling upward from 100 pounds to over 12,000. The tactical bomber, truly a combination of flying tank and pillbox, in many cases has had mounted in its fuselage and wings as many as 14 or 15 .50 caliber guns for attack, in addition to its bomb load.

Fighters have increased in speed and fighting power commensurately, developing from World War I's 2,500-pound machines attaining a speed of 140 miles per hour and mounting one .30 caliber gun, to long-range 13,000-pound aircraft of approximately 500 miles per hour mounting eight .50 caliber guns.

These strictly combat types of military development must, in our appraisal, be supplemented by further development of the robot bomb (V-1) and rocket (V-2), and later guided missiles of many varieties, which, when consideration is given to the likelihood of the future use of lethal gas, again point the moral, the need exists for subordinating every other consideration to the prevention of future wars. This crescendo of destructiveness can well be fatal to civilization. Acres of gas-filled rockets, poised and aimed to distant cities, can only be stopped by preventing their production and installation.

We must stress this tendency of modern warn towards total destruction—a truly vicious spiral insofar as progress of civilization is concerned; and again we must appraise our ability to master ourselves in using the types of weapons which we now have available. Locating our factories underground and possibly moving many more activities similarly can only be looked upon as a retrogression and probably an ineffective measure. In this regard, although dealt with later more extensively, I would like to introduce here the conception of the tremendous difference between war and policing; the one for destruction to attain national ends, the other to maintain order and achieve security for all.

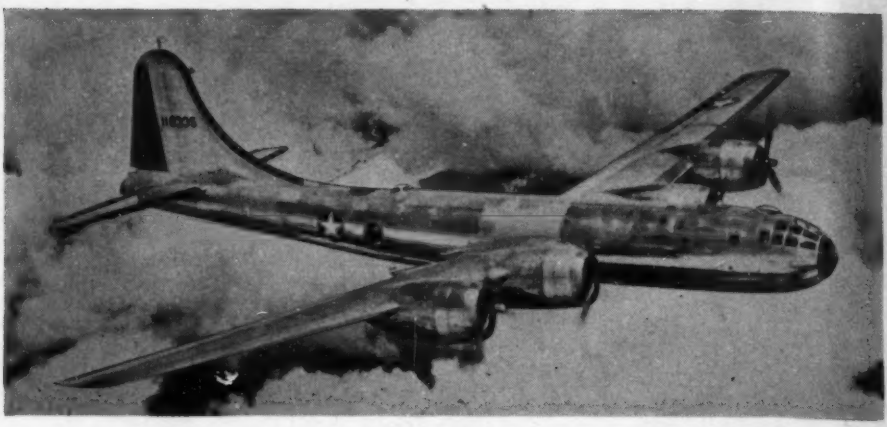
It is appropriate to stress the fact that war-

## Coast-to-Coast air line flies direct from New York-Detroit to Seattle-Portland

*Northwest Passage* is here... to round out the nation's air transport system, as the fourth coast-to-coast air line.

It brings—for the first time—the advantages of fast, direct coast-to-coast air service to the great cities across the top of the country.

**NORTHWEST AIRLINES**



JAPAN KNOWS IT WELL—The B-29 SUPERFORTRESS, military giant of the skies. Says Mr. Wright: "The strategic bomber has evolved from the lumbering 'crates' of the last war to the present sleek, long-range deadnaughts of the air, typified by the SUPERFORTRESS."

fare has changed from a conflict between the armed forces to total war which encompasses whole populations both as targets and as producers of weapons.

Economic efficiency in terms of war is economic inefficiency in terms of public welfare! The per capita cost of war has increased tremendously, even since World War I.

**It now costs over $50,000 to kill one German or Jap. To kill each enemy soldier it cost Napoleon but $3,000 and Caesar 75 cents! And there is no glamor in war.**

Well do I remember when visiting General Doolittle's Eighth Army Air Force headquarters last year that his first display was a gallery of pictures showing planes going down in flames or in pieces—our planes!

Of great significance, however, from our present point of view, is the development of air transport during the war. Although its importance was little appreciated by us at the outset, its relative contribution to the war effort has increased by leaps and bounds since 1942. The transport plane has served many purposes, such as carrying of troops or paratroops, the towing of gliders, evacuation of wounded, transportation of officials and the establishment of important communications both over land and sea. In the Pacific war particularly, it has served as the work horse of the other services, transporting materials for the construction of air fields, carrying food to isolated troops, carrying spare parts and even machines of large size, and performing every possible type of service in the island warfare. Progress could not have been so rapid as it has been by a wide margin without the air transport planes which have been made available during the last three years.

It should be noted that, with the exception of the specific military character of some of its cargoes, *all uses developed during the war for the air transport plane will have direct application to peacetime functions.*

## 5—GOVERNMENT AND CIVIL AVIATION

Government may have three functions to perform with respect to any new development such as aviation: promotion, regulation, or operation. It may be of interest to the readers to be reminded of the type of Government participation in civil aviation which exists in the United States under the Civil Aeronautics Act of 1938. Under this law as modified by subsequent executive rearrangement, there have been established two main civilian agencies dealing with the air: the Civil Aeronautics Board and the Civil Aeronautics Administration.

The functions of the former are for the most part regulatory, dealing with the economic phases of air transportation, including airline business relationships, and especially concerned with the rendering of decisions as to when new air carrier enterprises can properly be established from the standpoint of public convenience and necessity. When an airline decides that it can economically establish an extension to its existing routes, or when a new enterprise wishes to enter the field, in either event it must present its case to the CAB before operations can start. Public hearings are then held to bring out evidence on which the CAB can base its decision on

the propriety of inaugurating the operations.

Another function of the CAB is more legislative in character in that it involves the formulation of the Civil Air Regulations, which cover all phases of aviation, divided into the following groups and sections: Aircraft, subdivided into airworthiness of the airplane, engine, propeller, equipment and radio, and with maintenance for each: Airmen, including certification requirements for pilots, mechanics, traffic controllers and airmen physical standards in general; Air Carrier Operating Certificates; Air Agencies, including flying and mechanics schools and repair stations; Air Navigation, subdivided into air traffic rules, scheduled air carrier rules and foreign air carrier rules; and finally a section on definitions. Two final functions, judicial in character, involve the determination of violations of regulations and penalties which should be imposed in case of appeal; and the investigation of accidents.

In connection with the economic function, it should be noted that insofar as domestic air carriers are concerned, subsidy of operations has largely disappeared. In the 10 percent of instances where anything resembling subsidy still exists, it is supplied only through the medium of special payment for the carriage of mail. It is a subsidy to the public receiving the benefits of a service still marginal from the economic standpoint.

During the first 25 years of domestic air mail service, the postal revenues were less than the total expenditures paid out by the Government, including direct payments to the airlines for carrying the mail plus indirect Post Office Department costs apportioned to the air mail account. Then in 1943 the condition reversed and a substantial profit was shown. This has increased subsequently to such extent that during the first half of 1945 —about now, in fact—the cumulative deficit of the first 25 years has been offset completely by recent profits. This is a condition confidently anticipated as one likely to continue each year after the war.

In the field of foreign air mail service, this healthy condition has not yet been reached, though the trend is definitely in the right direction.

A corollary of this trend is the possibility of eventual elimination of the air mail surcharge, an action which would substantially increase mail loads, as under such condition all mail would be transported by whatever means would be most rapid, decision being made by the Post Office Department officials —another benevolent spiral!

The CAB does not control the frequency

LIQUID ENVELOPE
New~Spray Gun Method of "Packaging"
Planes . . . or Parts . . . or Air Cargo
Saves weight . . . saves on container costs. Protects laden against moisture and corrosion . . . cushions it against shock. Sprayed or dipped, "Liquid Envelope" forms an impervious, flexible plastic-coating of any desired thickness . . . peels off quickly and easily, leaving surfaces unblemished.
FREE BOOKLET—just off the press —16 pages in color—gives full story of "Liquid Envelope" with properties and suggested uses. Sent without obligation on request to
BETTER FINISHES AND COATINGS, INC.
268 DOREMUS AVE., NEWARK 5, N. J.

**WHEN AIR MAIL WAS A BABE—Air transports of World War I vintage, these craft resemble the transports of today as much as a condor does a sparrow. Shown above are the Army planes which were the first to be flown in the mail service 27 years ago. The author points out that "during the first half of 1945 . . . the cumulative deficit of the first 25 years has been offset completely by recent profits." This condition is "confidently anticipated as one likely to continue each year after the war."**

of air carrier schedules, once new routes have been authorized on the basis of public convenience and necessity. They do, however, as stated above, control the mail payment rates, and therefore profits in general. Their objective is to establish the lowest rate compatible with economic health, which implies need for profitable operations. Otherwise stated, their object is to hold charges to the public, the consumer, to a minimum. Therefore, should the profits of an air carrier appear to be unreasonably high, the CAB may call for new hearings to ascertain airline justification for retention of existing rates as against public need for a reduction in rates for the carriage of mail, passengers or cargo.

The CAA, on the other hand, as its name implies, is executive in character, although within its jurisdiction are certain phases coming under all three of the functions first named; *i. e.*, promotion, regulation, and operation. Fundamentally, however, its whole *raison d'etre* is summed up in the directive it has received from Congress "to encourage and foster the development of civil aeronautics and air commerce in the United States and abroad." This promotional aspect is currently applied to the development of airports, to training and education, to the preparation and dissemination of information and statistics dealing with aviation, and to participation in activities involving the furnishing of assistance to foreign countries.

From the standpoint of regulations, this agency has the job of enforcing the Civil Air Regulations that the CAB has enacted, dealing with aircraft, airmen, and air carrier operations. Its only actual operating function, which, however, is its largest activity from the standpoint of personnel, is the operation of the Federal airways. Here it establishes, maintains and operates all aids to air navigation which form part of the Federal airways' system. Included, of course, are the radio ranges, beacons and emergency fields. It also handles air traffic control operations at airport towers and traffic control centers and performs the ground communications functions of disseminating weather and other types of information.

The many functions of the CAA make necessary a decentralization of its activities with personnel located in all parts of the country, and many abroad. Policy and technical direction emanates from Washington with operations locally administered. The CAA

has a total force of just over 10,000 persons, of which 1,000 are in Washington. The CAB, on the other hand, has a total personnel strength of 330, all stationed at the Washington headquarters.

In carrying out its duty of "encouraging and fostering" aviation in the United States, it is the responsibility of the CAA to prepare long-range programs, anticipating the growth of aviation and the attendant needs for the installation of improved aids to air navigation. Here, indeed, is a difficult task when consideration is given to the rapid development of electronic devices occasioned by the war, which may almost overnight completely alter our conception of air traffic control and means of assuring air separation in general.

At the present time very great effort is being made by the CAA to lay a proper foundation for a rapid but sound development of private flying, the importance of which can scarcely be overestimated. The encouragement to the owner of the personal aircraft furnished by CAA is incorporated in a four-plank program:

1. *First is the establishment of airports, particularly those of the smaller sizes adapted for use of the private flyer.* At present the airports in the United States total about 3,000. The Federal aid airport program which we have suggested to the Congress for consideration envisages an increase to 6,000. Over 80 percent of the increase will be in the smaller Class I and II airports. The program is so planned as to place airports at relatively uni- for instances and in sufficient numbers in communities as to make private flying really practicable, as is the case with the automobile driver who has surfaced roads for his use.

2. *The second point is to examine existing regulations and their effect on private flying,* with view to making recommendations to the CAB covering changes which will, to the maximum extent possible commensurate with public safety, relax requirements and make it easier to obtain a pilot certificate and otherwise enhance the attractiveness of personal aircraft ownership and operation.

3. *The third point is the encouragement of aeronautical education and pilot training.* It is hoped again to establish a Federal aid pilot training program which, in company with the high school educational work that is being established, will make the coming generation universally air minded.

4. *The final plank in the program is the development of the personal aircraft itself,* which, although it will be carried out in detail by the aircraft manufacturing industry, will be fostered and aided by the CAA. It is believed necessary in order to attain our present goal consisting of a registered total of 400,000 planes 10 years hence, that the personal aircraft must be considerably improved in a number of respects. Its price must be reduced, its safety enhanced, its utility increased by means of improved performance, and several features added which will make it in general more attractive. Here I refer particularly to such improvements as the decrease in noise, making flying more pleasant not only for the occupants of the plane, but for the residents living adjacent to the airparks, which, under our airport program, must, we feel, be located within residential sections if they are to serve their proper purpose. Another feature in the development of the airplane itself is the further development of the undercarriage, possibly along the lines of the Maclaren gear developed in England, which will make cross-wind landings safe and practicable.

It is the hope of those of us involved in carrying through this program that we may contribute towards meeting the overshadowing need of our generation for intelligently organizing Government operations dedicated to the advancement of the common good—in this case, aviation. In this highly specialized age it is particularly necessary that Government cooperation be extended in such fields, as the average man cannot possibly keep abreast of the rapidity of technical advances.

***(Continued next month)***

**KLM**

**ROYAL DUTCH AIRLINES**

**TO**

Aruba • Bonaire • Barranquilla
Camaguey • Ciudad Trujillo
Curacao • Kingston • La Guaira
Maracaibo • Miami • Paramaribo
Port-au-Prince • Port-of-Spain
St. Maarten

**521-5th Avenue, New York 17, N. Y. MU 2-7894 or any office or agency of Holland-America Line or Air Express International Inc., Miami, Fla.**

**MAKE ONLY VITAL TRIPS**

**WORLD'S OLDEST AIRLINE**

# *Packaging for Global Shipments*

**CORROSION, deadliest enemy of metals, has lost its battle with the men responsible for shipping Hamilton Standard propellers and spare parts to the armed forces. Fighting with oils, greases, specially treated paper, and metal foil bags, the Hamilton Standard packaging experts now prepare their shipments with confidence that they will still be unscarred when the wrappings are removed—anywhere in the world.**

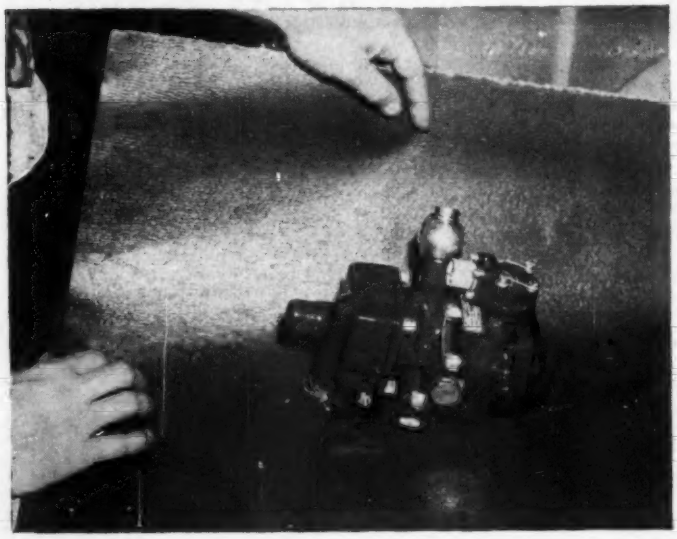
As the war emphasis now moves into the Pacific, the winning of this battle assumes even more importance. Most of the Pacific areas are noted for their corrosion-favoring climates, and the problem has been a huge one ever since the first landings on Guadalcanal. Army and Navy experience has been incorporated in their specifications, ANP 30 and ANP 13, and all Hamilton Standard propellers and parts are packaged in accordance with these requirements.

Various combinations are used in the continuing battle against corrosion at the propeller division of United Aircraft Corporation, depending on the type of metal of the part involved. In some cases, parts are not oiled, but placed in a heat-sealed metal foil bag from which the air has been exhausted. In others, heavy grease and the bag are both required, and in still others silica gel is used as a dehydrating agent.

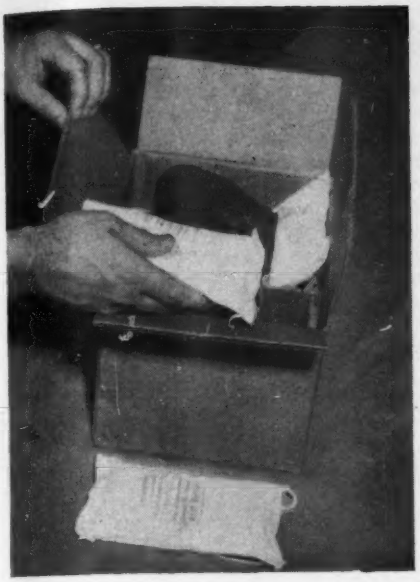
There are more than 1,800 different kinds of Hamilton Standard spare parts. They vary from a tiny cotter pin, about an inch long, to a spinner 26 inches long and 32 inches in diameter. Some parts, because of their size and requirements, are boxed individually, but most are packed six, 12, or even 50 to a box.

Complete propellers are disassembled for boxing and all grease is removed. The parts are then dipped into Cosomoline and placed in special cardboard cartons, which are in turn inserted in Butvar metal fail bags together with silica gel. Every propeller receives this complete treatment, as the final destination of none is known, and they may wind up in Texas, the South Pacific, or Alaska.

The defeat of corrosion has marked just one phase in the never-ending struggle to keep our warplanes flying on all fronts of the world. The air-shipment of spare parts has, in some instances, been responsible for the winning of a battle, and the fact that they have arrived



READY FOR PACKING — Already coated with a fine oil, a propeller governor goes through the second process of being wrapped in Grade A wrapping paper.



DEHYDRATING AGENT—This photograph shows the placing of silica gel in the carton. It acts as a dehydrating agent.

in first class condition has been of prime importance.

Of equal importance, however, have been the factors of appearance, boxing efficiency, inspection, speed of handling and dependable identification. All have played their part in getting materiel to the front as rapidly as possible.

These factors are stressed in Hamilton Standard's packaging system, which is designed to be of service to the propeller shop anywhere—at airlines, commercial depots, and the many posts of the Army and Navy. Perhaps its greatest advantage, one that returns immediately to the corrosion problem, is that only one box of the several contained in each package unit needs to be opened to obtain a necessary part, the remainder being kept securely packaged and protected.

As a result of recent findings by both the armed services, the number of parts to a package has been reduced. Whereas some parts previously were shipped 50 or 100 to a box they are now packed in smaller quantities in separate envelopes in order to affect as few parts as possible whenever a package unit is opened.

Of importance psychologically in packaging and handling is the appearance of a package,

BARR
SERVICE
30 Years OF CONTINUOUS SERVICE TO THE AIRPLANE EXPORT TRADE
INTERNATIONAL SHIPPING AGENTS
Complete Facilities Arranging, Dismantling, Boxing, Forwarding, All Risk Insurance
BARR SHIPPING COMPANY
HARRY K. BARR, President
25 BROADWAY NEW YORK
Cable Address: BARRSHIPCO

and for this reason all boxes in which Hamilton Standard parts are shipped are in striking colors and covered with the design of the company's trade-marks. This makes them easily recognizable and eliminates confused hunting in depots when parts for either the Hydromatic or Counterweight propellers are needed.

Carefully organized, the processing of parts through the department bears all the characteristics of assembly line production. Routed to benches after arrival from the company's plants, they are handled by three girls, who prepare the material for inspection, check the part against latest engineering blueprints for part number, scratches, changed letters and corrosion, wrap the part in corrosion proof paper and grade A wrapping paper, then box the package.

More than 20 different inserts, dividers and filler pads, in combination with 135 different box sizes, allow an almost unlimited number of packaging arrangements to assure boxing efficiency. Operating under the standard mass production procedure, girls inspect only one type of part at a time, eliminating errors and saving time.

Sealing the boxes with transparent tape prevents any future tampering, and labels identifying the product, its part number, the quantity, inspector's certifications, and engineering change on the part if there is one, further aid in proper identification.

Substantial quantities of parts boxed in advance and stored in anticipation of future requirements assures faster handling and checking of required quantities.

The air journey to Army, Navy, and commercial depots all over the world starts when the boxes are packed in water resistant bags, which in turn are placed in strong wooden cases capable of withstanding rough handling. Typical of the changing picture of cargo packaging is the latest requirements that holes be bored in sides of some boxes to allow air to enter. This, it has been found, prevents the formation of mold inside the cases, while the water resistant bags and other corrosion preventatives maintain complete protection of their precious contents.

## KLM Gets Transports

Three DC-3s, allocated to KLM by the United States Government, are undergoing reconversion in Los Angeles and probably will be put into service on KLM's main lines in the Caribbean early next month. These acquisitions will more than double the passenger- and cargo-carrying capacity on those air routes.

## BOAC Overseas Flights

The British Overseas Airways Corporation has announced that passage to England can now be obtained without priority for persons having business there. Four weekly flights to Baltimore are planned. According to P. E. Bewshea, few seats are available for westward trips.

## "National Interest Trips"

V. E. Chenea of PAA stated at press time that commercial travelers classified as necessary to "national interest" now are acceptable for *Clipper* transportation to Europe. The new regulation states that certification can be obtained from the War, Navy or State Departments for those who seek passage, when their purpose is to contribute to the relief or rehabilitation activities in areas affected by war or the resumption of economic or other projects disrupted by war.

WEIGHT-SAVERS—These specially designed pyramid-shape wirebound crates, which save the shipper two pounds in tare weight per container, are carrying airborne asparagus across the country in a fraction of the time required by other methods of transportation. Last February, a big California grower, Ralph E. Myers, made the first air shipment to a New York concern via United Air Lines. The 6,000-pound load was composed of 136 crates of asparagus, 20 crates of broccoli, and five crates of flowers. Since, there have been air shipments of lettuce, tomatoes, cantaloupe, and strawberries, and plans are being formulated to transport cherries and peaches. Sunday-picked fruits and vegetables are on sale in Eastern markets the following Tuesday morning. The Wirebound Box Manufacturers Association reports that a new wirebound crate is in the process of being designed for tomatoes.

# 100,000 Miles an Hour!

***No, the title is not a typographical error. Jet propelled transports in the not too distant future will be flying at speeds exceeding that of sound within the earth's atmosphere, predicts the author. But the planes will not confine themselves only to the atmosphere! Here is a mind-staggering article with unusual appeal.***

By HALL L. HIBBARD
*Vice-President and Chief Engineer*
*Lockheed Aircraft Corporation*

AS wasteful and horrible as war has always been, many of man's noblest and most useful works have been born under war's stimulus. We can see this particularly in San Francisco where the war has brought men of good will from all nations to plan a new peaceful world, a world of law and justice. It required a war of surpassing ferocity before we called the San Francisco Conference. Yet we all pray that out of this meeting will come a world worthy of the sacrifice of those who have made this Conference possible.

One of the few beneficial effects of this war has been the tremendous acceleration of scientific development. Although these advances, like the United Nations Conference, have been born of war, their impact on the peaceful world to come is stupendous.

One such advance is the perfection of jet propulsion—unquestionably the greatest single advancement to come out of this war in the field of aviation. I think that jet propulsion is the entrance into the final phase of man's effort to propel himself through space.

But first let me tell you a true story. The scene is Washington, D. C.; the time, 1892; a slight gray-haired man is finishing a letter:

"*. . . And so, having served my office for 30 years, I hereby tender my resignation as Curator of the Files of the United States Patent Office. My constant study of thousands of patents has convinced me that I should spend no further time at this work since it is my opinion that everything worthwhile has been invented.*

"*Your Faithful and Obedient Servant,*
"*Benjamin Walterson.*"

We were in somewhat the same position in 1939. Painstaking research and study had boosted the speeds of airplanes, like the familiar P-38 *Lightning* fighter, past the 400-mile-an-hour mark. But then we were stuck! Extensive modifications and expensive changes managed to raise our top speeds a mile here, two miles there. Aviation seemed to have reached its ceiling. Engine power, propeller efficiency, and our old enemy, drag, combined to hold us up.

It is significant that during six years of the most intensive wartime research, the combined efforts of the best brains in the world had barely been able to squeeze an additional 50 miles an hour out of the conventional airplane. Every expert in aircraft, engine, and propeller design, both in Allied and enemy countries, was concentrating on the same problem. All were stalled at a top speed not far above 450 miles an hour. The efficiency of the propeller drops off sharply at about this speed level.

Fortunately the American aircraft industry is not made up of men disposed to give up easily. Some of us had known for a long time that propeller-driven planes would reach their limit between 450 and 500 miles an hour. We thought we had the answer. Our guess has worked out, I am frank to admit,

even better than we had hoped at first.

After years of painful climbing mile by mile from the Wright Brothers' first speed of about 10 miles an hour, we have suddenly in one great stride advanced the upper limits of aircraft speeds by much more than 100 miles an hour (how much more military security forbids me to tell). Jet propulsion has solved many of the most troublesome problems. But don't mistake the fact that we have an entirely new set of problems, equally hard, but equally capable of solution.

But now what about this invention that will mean so much in the remaining days of war and so much more in the days of peace? First let's get the theory completely straight.

Visualize two spheres: A and B. These spheres, we shall say, have been filled with illuminating gas. A spark plug is provided in each, and in Sphere B there is an opening in its surface.

Now let's imagine that the gas in Sphere A has been ignited by the spark plug. There is an explosion resulting in a sudden increase of pressure of the gases inside the sphere. This pressure is exerted against the sides of the sphere—equally against all points. But because the pressure is equal at all points on the sphere's surface, the sphere will not be moved by the explosion. If we were watching, we would hear a sharp ping. But because the pressure on one side of the sphere is cancelled out by the equal and opposite pressure against the other side of the sphere, there would be no motion.

Now we shall repeat the performance with Sphere B. The result of the explosion again will be the creation of extreme pressure within the sphere exerted outward against the sphere's inner surface. Again these pressures will be equal at all points on the sphere's surface except at the hole that we mentioned. Here the gases will have nothing to press on and will escape.

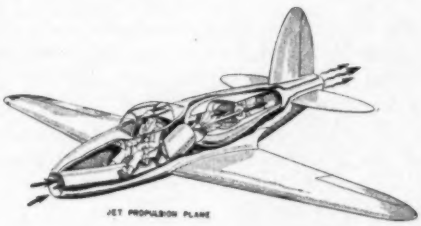
This means that we shall have all of the forces created by the explosion cancelled as before except those acting on the surface of the sphere directly opposite the hole area. Here there is a positive pressure on the side of the sphere where there is no opening. But on the other side, where the gases are able to escape, the pressure is zero. The result is obvious; the sphere will be pushed in the direction of the positive pressure—away from the opening.

That is the principle of jet and rocket propulsion. It is simple. There is nothing more to it. Movement is obtained by forces within the sphere. Nothing on the outside has any bearing on what happens. It makes no difference if we imagine our sphere to be in air, water, or a vacuum. Movement of the sphere does not result from the blast of hot gases pushing against a cushion of air; this is a popular misconception.

There's our principle—a principle that has been known for years. Let's look now at the applications that have been developed already and those that we can safely predict.

To begin with, there are three different types of jet propulsion. Theoretically the best and the simplest is the rocket. In the rocket type all of the elements for operation are carried within the aircraft. There is no

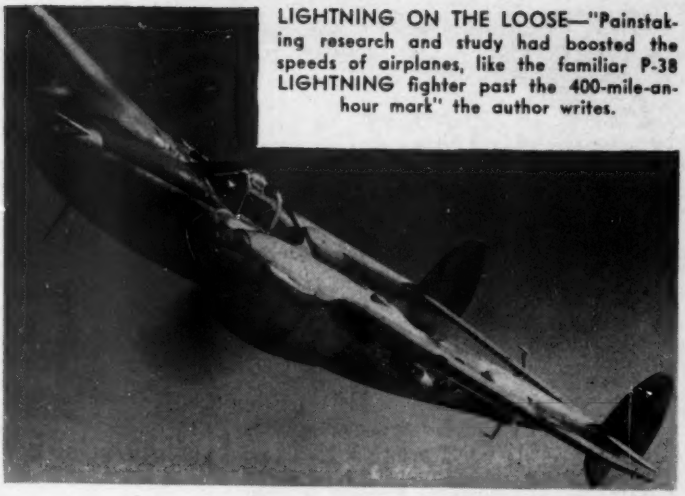
**THE speeds predicted by Mr. Hall L. Hibbard may appear fantastic at first. But who, only three or four years ago, would have prophesied a gigantic instrument of war streaking toward earth at the astonishing rate of 2,000 miles an hour? The German V-2 rocket bomb made this a terrible reality. Translated in terms of civil aviation, jet propulsion carries within itself a revolutionizing factor which will create new horizons in tomorrow's air transportation of passengers and cargo. It also will be a major element in the reshaping of the world.**



JET PROPULSION PLANE

dependence on outside air to maintain combustion. This is the ultimate method of transportation and the type that will one day carry us outside the earth's atmosphere.

The second type of jet propulsion differs from the rockets in that air must be drawn in and mixed with the fuel to support combustion. This type of airplane can travel only within the earth's atmosphere, although it can reach altitudes far above the ceiling of conventional airplanes. The Lockheed P-80 *Shooting Star* is an example of this type of jet propulsion.



**LIGHTNING ON THE LOOSE—"Painstaking research and study had boosted the speeds of airplanes, like the familiar P-38 LIGHTNING fighter past the 400-mile-an-hour mark" the author writes.**

Finally we have a combination arrangement whereby a conventional airplane propeller is driven by a gas turbine with the same basic arrangement as the other jet types.

Now let me point out that with either the rocket or jet engines efficiencies are good only at speeds in excess of 500 miles an hour. However, by using the combination turbine-driven propeller, we can obtain the advantages of the jet type engine without suffering from the low efficiency factor of pure jet engines at speeds below 500 miles an hour.

This arrangement consists of the jet-driven turbine connected by an extended shaft and the necessary gearing to a conventional airplane propeller. This is a simple, efficient arrangement and one that I predict will soon come into wide use as a replacement for the present type of reciprocating aircraft engine even on existing aircraft. Similar gas turbine engines will doubtless come into widespread use as the power units for railway trains, buses, electric power generators, and probably even the automobile of the future.

These applications of the jet principle will not depend on the reaction of unopposed forces since the turbine fan on this type will be much larger and will absorb a high percentage of the total power from the jet blast. There will be no violent exhaust blast since the force that is not absorbed by the turbine will be eliminated by means of velocity reducing devices.

Most engineers agree that gas turbines will completely replace the conventional reciprocating engines within the next few years. A gas turbine is simple, light in weight, cheap, and easy to maintain. We know, it can use kerosene, or diesel oil, for fuel which is less explosive than gasoline.

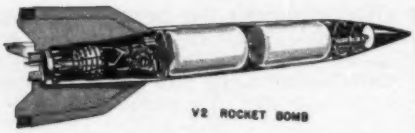
*I am certain that all airplanes (military, transport, or privately owned) will make use of one of these forms of jet propulsion in a matter of eight to ten years.* It can be applied equally well to large and small airplanes, and can be used in one form or another on airplanes designed for any given speed range.

Riding in a jet propelled plane is like nothing you have ever experienced before. The plane flies effortlessly, silently and with no vibration. Pilots say they have a feeling of unlimited power. There is no fatigue caused by the familiar noise and vibration of the conventional reciprocating engine and propeller system. P-80 pilots tell us that all they hear is a pleasant hum as the plane slides through the air.

From the ground the P-80, or any jet ship, can be distinguished by the unearthly shriek that follows its passing. The whine of the turbine fans combines with the roar of the jet to make a noise that resembles nothing else on earth. It sounds like a giant blow-torch.

The really important fact of this new type of propulsion is speed—speed such as we have never known. Jet propulsion opens wide the door for speed!

The P-80 can be made to go faster in level flight than the speed of sound. This airplane will have excellent high speed performance at low or high altitudes and is much simpler than the conventional fighter airplane with a propeller and reciprocating engine. The air is drawn in through the



V2 ROCKET BOMB

nose and is carried around the pilot to the engine. Kerosene, carried in the wings, is piped into the engine where it is mixed with the air at high pressure. The mixture is exploded and passes through the gas turbine out the tail exhaust pipe. We could build enough range into this airplane to make it comparable to any single engine fighter in the sky today, and there is no comparison in the speeds of this type and conventional planes.

But speed itself brings special problems, particularly as we approach the speed of sound.

The speed of sound is 763 miles an hour at sea level, and at this point air resistance reaches a peak. Then, strangely enough, it drops almost as sharply as it rose. At 1,000 miles an hour the drag is not too much higher than the drag we are overcoming successfully now at much lower speeds.

This drop in drag makes it possible for us to look optimistically at speeds well beyond that of sound. It may be possible literally to dive through the high resistance area of air compressibility and come out at speeds which will permit us to keep flying in the lower resistance area above the speed of sound. Our information in this region has come from the study of bullets and ballistics. It is interesting to note that the fastest man-made objects are bullets, one of which has reached a speed of 6,150 miles an hour—nine times the speed of sound.

But before we get too enthusiastic, there does not appear to be much hope of speeds much over 1,500 miles an hour in the earth's atmosphere. The reason is that friction of the air heats up an airplane to a point where it is no longer possible for man to live within it. A cooling system of sufficient size to counteract this heating tendency would be prohibitively large.

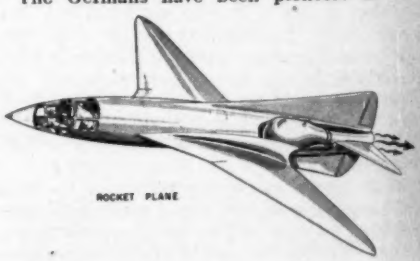
All of us have seen meteors glow when they rush through the thin air of the upper atmosphere. Air friction burns up most of them in a matter of a second or two. The German V-2 rocket bomb falls at 2,000 miles an hour, and witnesses have reported that it glows a dull red from air friction as it falls. I do not know of any method to overcome this trouble.

*But we can avoid it altogether. We can get out of trouble by getting out of the atmosphere to where there is no air.*

This is where the rocket comes in. With rocket propulsion all the elements for operation are carried in the plane. Rockets will work where there is no air, even in empty space. There is where we will achieve truly unlimited speed.

The pilot of a rocket fighter will probably be in the prone position. The rocket motor is in the rear, the plane has knife-edge wing and tail surfaces and an extremely sharp nose. The method of steering has been perfected, but is not shown for military reasons. This airplane can be built and flown today, but the fuels available give ranges too short for good military usage. New fuels are being worked on feverishly in this country and abroad. *The answer is coming, and coming fast!* Then we shall have airplanes such as this capable of flying at altitudes of 100 miles or over—where there are no problems of atmospheric resistance—and at speeds practically without limit.

The Germans have been pioneers in this



ROCKET PLANE

## The Author

Hall L. Hibbard, vice-president and chief engineer of Lockheed, was born July 25, 1903, at Fredonia, Kansas. He lived for 13 years in the Philippine Islands, where his father was a Presbyterian missionary, but returned to the States to complete his education in turn at Fredonia grammar and high schools, the College of Emporia, and Massachusetts Institute of Technology.

Mr. Hibbard says that he cannot remember a day when he did not intend to become an aeronautical engineer. His first job in the industry was as a draftsman in the Stearman Aircraft Company at Wichita, Kansas, in January, 1928. He advanced in the course of three years to project engineer. He served for a time as consulting engineer with the Viking Flying Boat Company, of which Robert E. Gross, now president of Lockheed, was the head.

In 1931 Mr. Hibbard became chief engineer of the Stearman-Varney Company of Alameda, California, and came to Lockheed in 1932 as assistant chief engineer. In 1933, largely as a result of the work he had done on the famous *Electra*, he was promoted to vice-president and chief engineer.

In his capacity as an aeronautical engineer, Mr. Hibbard has taken active interest in the development of the twin-tail, the single-spar all-metal wing, and the perfection of the Fowler flap. He helped in the pioneering of heavy wing loading. Among the famous aircraft which he has engineered or supervised as chief engineer are the Lockheed *Electra*, the Hudson bomber, the Lockheed *Lightning P-38*, the *Lodestar* transport, and Lockheed's first four-engine sky giant, the *Constellation*.

field. Their Messerschmitt 163-B is a pure rocket glider. Until the P-80 appeared it was the fastest plane in the world. Theoretically the Messerschmitt 163 has no ceiling. Given the necessary fuel capacity and provisions for pressurizing the pilot's cockpit, it could fly right out of the atmosphere. Fortunately the Germans were only able to provide a time range of 15 minutes. But even at that, this airplane, had it been available in sufficient quantities, early enough, with fuel and trained pilots to fly it, might have made a serious difference in the success of our air war against the Reich. Happily, that threat is now passed.

For simplicity I have pictured only single-engine aircraft. However, the jet or rocket principle applies to all sizes of aircraft. *Transports in not too many years will be flying at speeds exceeding the speed of sound while in the earth's atmosphere.* And if higher speeds are desired they can rise to the substratosphere through the use of rockets.

Not long ago I was talking with an Eastern aviation writer. He asked me to set a figure that I thought represented the top speed that could be achieved by the use of this new power. Now that is pretty difficult. I cannot really see any limits to speeds of the future, provided always that we have somewhere to go at those speeds—that they have some economic feasibility.

But to be agreeable I mentioned the speed of 100,000 miles an hour as a speed that could reasonably be expected when rocket ships start flying outside the earth's atmosphere. This figure was duly reported in the press.

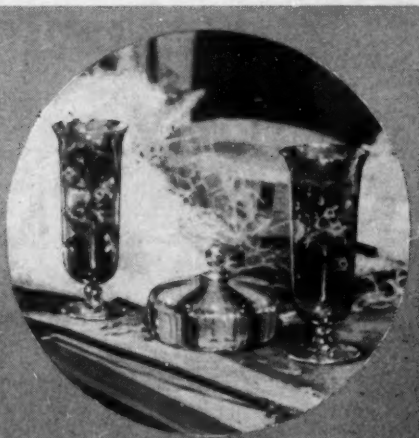
Several weeks ago I received a really plaintive telegram from the editor of one of the more sensational Sunday supplements. Had I been quoted correctly as saying that speeds of 100,000 miles an hour were possible? This editor just couldn't believe his eyes. When scientific prediction confounds the editor of a Sunday supplement, that's going some.

I mention this because I think it is important to our thinking about the world of tomorrow. There truly is no limit to the speeds that may be attained. We understand enough already to be able to predict the future to a certain extent. Speeds of 100,000 miles an hour are possible in my sober estimation. There may never be any reason why we will want to go that fast. We may never feel it necessary to fly 100,000 miles an hour. Nor 100 miles above the earth's surface. *But if we want to, we will!*

Some may feel that the human body will not be able to stand these extreme high


PARACARGO

FOR TODAY and TOMORROW



Another phase in results obtained by the constant research conducted by our Air Cargo Packing Division . . . your merchandise scientifically packed by us for shipment via air cargo and delivered by parachute. We invite your inquiries on any of your air cargo packing problems.

Actual photographs of fragile ruby glass vases and dish being unpacked after descent with a Switlik cargo parachute.

WEIGHING · STRAPPING · LABELING · SPOT STOCK SHIPMENTS · BALING · SEALING · SPECIAL CASES

The Manhattan STORAGE & WAREHOUSE CO.

AIR CARGO PACKING AND DISTRIBUTION DIVISION

7th AVENUE and 52nd STREET, NEW YORK 19, N. Y. — CIRCLE 7-1700

**JET PROPELLED HELICOPTERS TOMORROW**—Mr. Hibbard predicts that 10 years from now "most people who own automobiles today will want helicopters then. These helicopters will be jet propelled, too, the jets coming out of the rotor blades so that they resemble a spinning lawn sprinkler upside down." Above is a Sikorsky-built Army helicopter demonstrating one of its many features.

speeds, but aviation medical experts have stated already that there is no physical limit to the speeds at which man may travel. The surface of the earth, everyone and everything on it, are traveling 1,000 miles an hour day and night. Furthermore, the whole planetary system of which the earth is a part is whirling through space at 500,000 miles an hour. And thinking back to our friend, the Curator of Files in the Patent Office, don't forget that fearful observers predicted that human beings would be suffocated, the breath sucked out of their bodies, by the fearful speeds attained by the first railway engines—a matter of about 30 miles an hour.

No, speed doesn't scare us much. Acceleration and deceleration, though, are different matters. Accelerations and decelerations must be held to a value that the human body can stand. We measure these forces in Gs—the pull of gravity. Acceleration is the force you feel driving you back against the seat when you make a fast start in your car. The human body can stand a force of three Gs for an indefinite period. To visualize the speeds that can be attained at this low value, an airplane outside the earth's atmosphere accelerating steadily at three Gs would attain a speed of 10,000 miles per hour in less than five minutes.

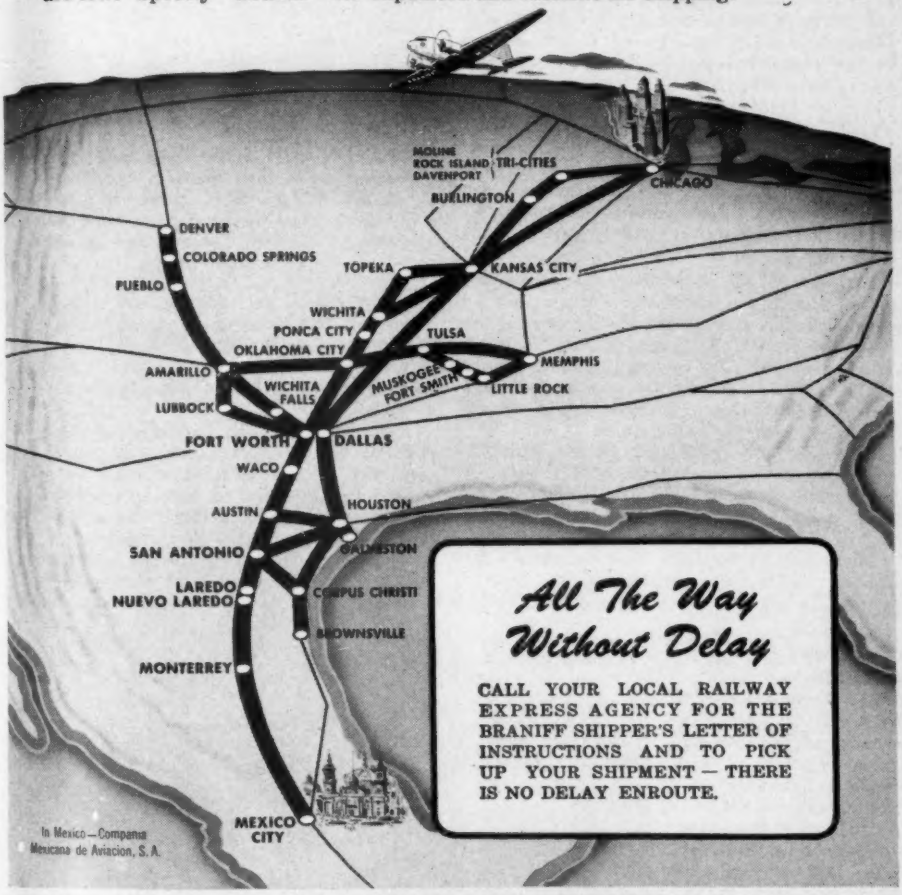
Perhaps you are interested in the type of airplane that you and your family will be flying, say, 10 years from now. *My prediction is that most people who own automobiles today will want helicopters then.* These helicopters will be jet propelled, too, the jets coming out of the rotor blades so that they resemble a spinning lawn sprinkler upside down. I can't describe this craft fully, but I think it will be the safest, simplest, pleasantest, most convenient form of travel ever devised. There are a good many problems to be worked out before jet driven helicopters are put on the market at a competitive price, but they are coming.

NO TIME LOST AT THE BORDER

# BRANIFF INTERNATIONAL AIR EXPRESS

*Between U. S. Cities and* **MEXICO**

Immediate, in-transit customs clearance at Laredo permits through, streamlined air cargo service between all points in the U. S. and Mexico. No necessity for "in bond" shipments... paper work is reduced to a minimum... rates are low. Specify "Braniff" for expedited and efficient air shipping.




*All The Way Without Delay*

CALL YOUR LOCAL RAILWAY EXPRESS AGENCY FOR THE BRANIFF SHIPPER'S LETTER OF INSTRUCTIONS AND TO PICK UP YOUR SHIPMENT — THERE IS NO DELAY ENROUTE.

**For Memorandum Tariff and Further Information, Write**

## BRANIFF AIRWAYS

**General Traffic Office, Love Field, Dallas 9, Texas**

Permit me to digress for a moment on a subject about which I feel rather strongly. We must never have another war. Just as the last war gave us a preview of this war on a puny scale, so this war has given us a preview of what war will be like if the United Nations conference in San Francisco fails in its objective and another war arises to scourge the earth at any time in the future.

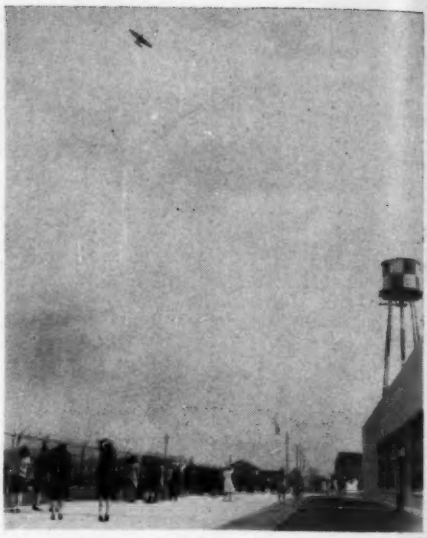
*The German V weapons failed in this war, not because they were basically unsound, but because they arrived too late and at an elementary stage of development that prevented their full exploitation.* Remote-controlled rocket bombs will be developed that can span half the globe and be directed with pin-point accuracy against any objective. Even in the rough stage of their present development, V bombs damaged 870,000 English homes and killed or injured 25,000 persons in the first 80 days of their use. Contrast the relative efficiency of a bomber or fighter plane of 1918 with a modern B-29 or P-38 Twenty years of development resulted in amazing differences. There is no reason to expect that another 20 years of hard work developing weapons for destruction and slaughter won't produce similar improvements on the V bombs and on other weapons which I am not permitted to discuss.

And let us not content ourselves with the old notion that a successful defense can be developed for every offense. There was no defense against V-2. Bombing was no good. The only way the German rocket bombs could be stopped was by sending infantry forces against their bases to cut them off and wipe them out one by one.

You can be sure of this: in the next war there will be no long period of semi-hostility when forces can be assembled. The aggressors' aim will be total destruction of his victim in the first *24 hours of hostilities.*

These are facts—facts that underline the urgency of the conference. It has got to succeed. I say this as an engineer. My training, experience, and interests are technical. I have no particular bent toward social or political thinking. But as an engineer I can see what is ahead for this world if our concentration on self destruction does not end once and for all.

I do feel, however, that the superiority in aircraft development which our country has achieved in this great war must be maintained in the years to come. Superiority in aircraft cannot remain static. Superiority demands constant change and improvement. Advanced airplane models are not created overnight—they are the result of years of research, planning, and development. I should like to



**BELL P-59A IN FLIGHT**—General Electric workers crane their necks to watch a twin-jet Bell P-59A AIRACOMET zip over the Syracuse plant during a lunch hour demonstration. Captain John Brown is at the controls.

**AUXILIARY JET PROPULSION** — A heavily-laden Martin MARINER zooming up off the waters of the Pacific in a fraction of the time previously required. This is the first flying boat in the world to take advantage of Jato jets. It has enabled the craft to fly at far greater gross weights than the 52,000 pounds for which it was designed.

mention at this time the great advantages to be derived from an adequate Government program that will carry forward the aircraft industry's program for research and development, along with sufficient production orders to permit development of efficient manufacturing processes.

But let's talk about peace. What does this new era in transportation mean to us? Most important, it means that we must revise all our thinking about space and time. The cities of the East Coast, Europe, and even of Asia, will soon be only a very few hours distant from San Francisco. More than ever, the world will become one neighborhood. *Travel will become cheap and even more pleasant than it is today.*

You will benefit in your daily life by the substitution of efficient gas turbine engines for the reciprocating engine of your automobile. The jet propelled helicopter will extend travel range for weekend trips and make a journey of several hundred miles a matter of only a few hours travel.

Finally, if we wish, it will open the reaches of the sky to our exploration. It staggers the imagination to think of flights outside the atmosphere. Yet such trips will be successfully completed. We can be certain at least that we will roll back the darkness from yet another corner of the unknown.

**SECRET**

*Photographs of the Lockheed P-80* Shooting Star *are not available for reasons of military security.*

GOOD NEIGHBOR ROUTE—Detroit, Memphis, Houston, and New Orleans are now being served by CHICAGO & SOUTHERN AIR LINES, establishing a link between the Gulf of Mexico and the Great Lakes. The new route also serves Toledo, Fort Wayne, Indianapolis, and Evansville, as well as provides daily connecting schedules for international traffic between the North and South American continents.

# AIR-PORTATION NEWS

REG. U. S. PAT. OFF.

SPEAKING OF AIR CARGO—Here is the first interior view of the famous Boeing C-97 transport. Shown is a ton-and-a-half Army truck parked in the upper fuselage section. Two such trucks can be accommodated on the main deck with other equipment, while additional cargo or personnel may be carried simultaneously in the C-97's lower compartments.

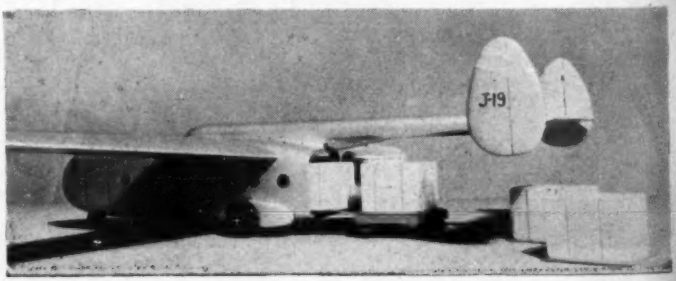
## 1944 Safety Awards Won by 21 Airlines

Twenty-one airlines were recipients of the Inter-American Safety Council's annual aviation safety awards for perfect safety records during the past year at a special luncheon ceremony in the Metropolitan Club, New York, on May 23.

Winners of the awards were: Panagra; Lloyd Aereo Boliviano; American Airlines de Mexico; KLM (West Indies Section); Empreza de Transportes Aerovias Brasil; Viacao Aeroea Sao Paulo; British West Indian Airways; Aerovias Nacionales de Colombia; Uraba, Medellin and Central Airways; Cia. Transportes Aeroeos Centroamericanos de Costa Rica; Cia. Cubana de Aviacion; TACA (El Salvador); Aerovias de Guatemala; Aeronaves de Mexico; Aero-Transportes; Comunicaciones Aereas de Veracruz; Lineas Aereas Mexicanas; Transportes Aereos Tampico; Caribbean Atlantic Airlines; Cia. Aeronatica Uruguaya; Aerovias Venezolanas.

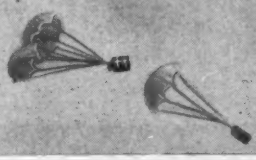
Serving eight South American countries, Panagra was the international air transport company with the greatest route mileage to receive a safety award. The Pan American Airways System was represented by four of its affiliates, and TACA three. Cia. Nacional Cubana Aviacion has had 11 consecutive years without an accident or fatality.

Presentation of the certificates was made by J. T. Wilson, president of the Inter-American Safety Council, to Vice President Douglas Campbell of Panagra and to the consuls general representing the countries in which the other airlines operates. Morris Mumper, director of aviation, Inter-American Affairs, Department of State, was the guest speaker.




AIR CARGO GLIDER—This is a model of the California Aero Glider Company's J-19 SKY-WAY EXPRESS, a new-type cargo motorless transport whose design has been granted a United States patent.

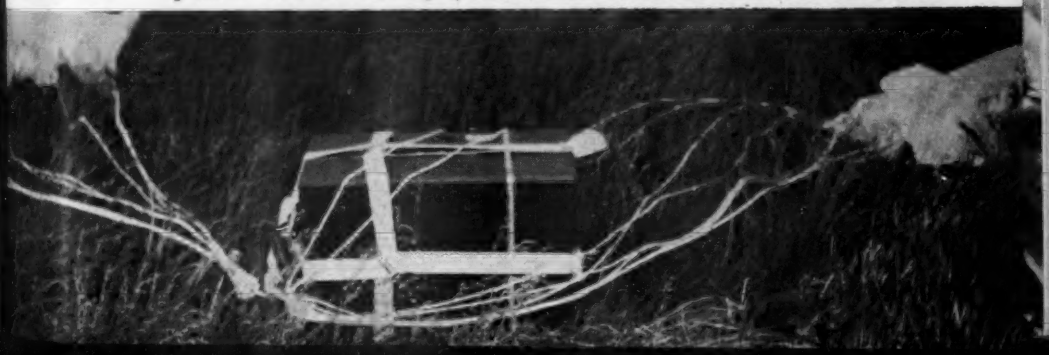
# 'CHUTE THE WORKS



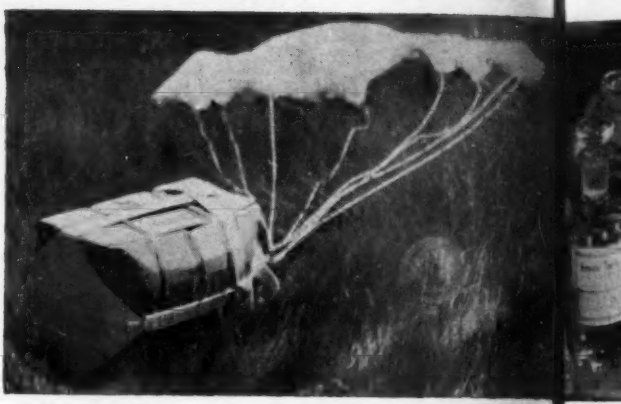
**1** DROPPED CARGO—Two containers of fragile merchandise dropped by a Waco from a height of 250 feet float to ground with the aid of nine-foot cargo parachutes engineered and manufactured by the Switlik Parachute Company. This is one of the 15 tests conducted by the Air Cargo Division of the Manhattan Warehouse & Storage Company and Switlik at Mercer Airport, Trenton, New Jersey, on May 21 and 22. Each of the tests was completely successful, resulting in not a single crack or scratch to the delicate 'chute-dropped goods.

**2** PREPARATION — Three Switlik engineers cooperate in double-harnessing a special Manhattan-packed masonite case containing 42 pieces of glassware and china. Ed Kunwel, pilot, is in his Waco.

**3** EASY LANDING—Pilot Kunkel was flying at 115 miles per hour when this case was dropped into a 15- to 18-mile per hour gusty at a height of 250 feet. This picture was taken a few seconds after the container of glassware and china reached the ground. Note the two cargo parachutes and the sturdiness of the box.

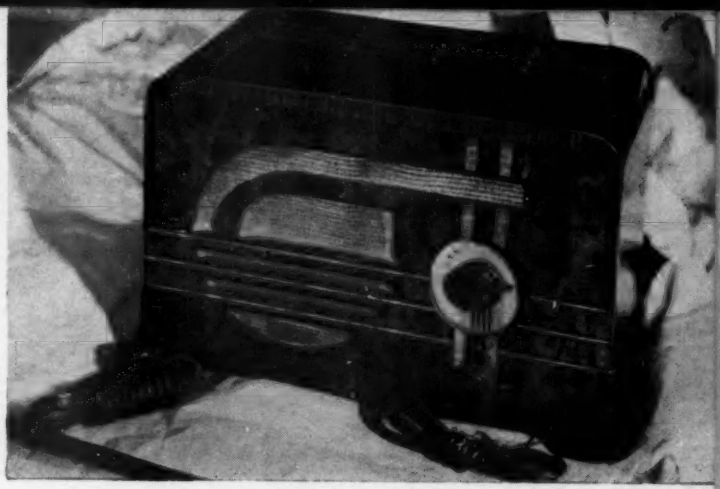


**4** PROUD DISPLAY—Not a single scratch mars the elegance of the glassware and china after the 250-foot drop. Chalk this up to first-rate packaging by Manhattan and effective engineering by Switlik.



**5** AFTER THE DROP—Believe it or not, this ordinary corrugated carton contains phonograph records. An extremely fragile item, this required superb packaging. The platters made their descent with the aid of a single cargo parachute.

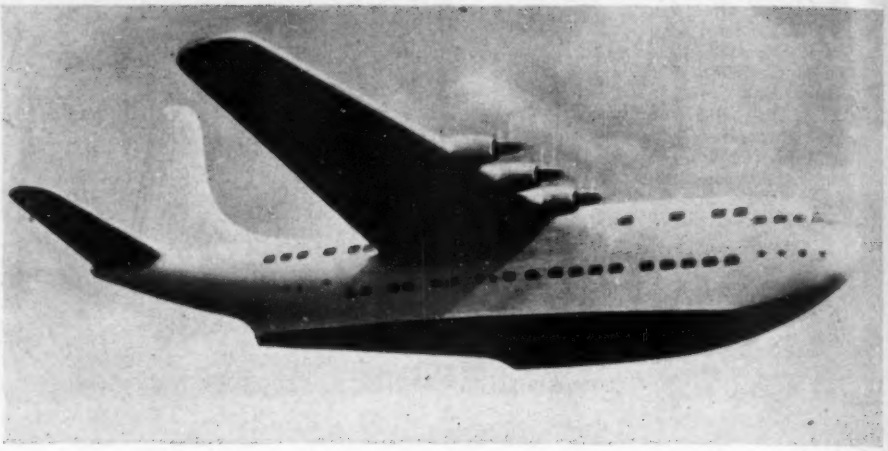
**6** PERFECT RESULT—W. H. Llewellyn (with hat) and John Farrell examine the contents of the carton after the drop. Not a scratch in the box! This points the way for great future possibilities.



**7** PLAYS PERFECTLY—Yes, even after a long drop from a plane with a cargo 'chute. Another one of Manhattan's tests, this Philco radio came through with flying colors. A similar radio plus a dozen tubes were dropped with like results.

**8** EXCELLENT SHAPE—These bottles of medicine and syringe cargo-'chuted safely to earth. Quick emergency shipments to hospitals and drug stores in towns off regular air routes are made possible by this demonstration.

**9** TEST WITNESSES—The high quality of success of the Manhattan Storage & Warehouse Company's air packaging experiments with Switlik cargo parachutes was acclaimed by (left to right) Albert T. Stretch, Switlik engineer; A. G. Harris, Eastern Air Lines air cargo representative; Edward B. Lockwood, of Edward B. Lockwood, Inc.; Gilbert F. McKeon, vice president of Manhattan; John Farrell, Manhattan packer; D. F. Burrill, of the Container Company; Spencer Severance, Switlik chief engineer; Lottie Switlik; S. W. Rice, EAL air cargo manager; Warren Fairbanks, of Aero-Insurance Underwriters; Ira Angstadt, of Aero Digest; L. R. Wyncoop, Railway Express Agency general agent; Lawrence McLean, of the Parachute Droptesting Company; W. H. Llewellyn, REA loss and damage supervisor; P. H. Cummings, air traffic executive; Edward F. Connelly, Switlik advertising manager; Joseph Rutkowski, of Switlik.



IN THE GARGANTUAN CLASS—Six engines power the Blackburn Flying Boat which, when constructed, will be the biggest and heaviest seaplane ever built in Britain. The plane will be able to carry 90,960 pounds of cargo or 160 passengers. Weighing 138 long tons (more than six times the weight of the SUNDERLAND), it will reach to a length of 148 feet with a wingspread of 202 feet.

# JOHN BULL GETS BUSY

By DeWitt Rhodes

GREAT BRITAIN'S aviation men mean business. With V-E Day behind them, there is a great scurrying about for position in the world mosaic of civil aviation; and if the design is far from completed, it is at least beginning to take shape. In truth, the British are not treating the Air Age lackadaisically.

First in the news is the 138-ton flying boat designed by Blackburn Aircraft (Great Britain uses the long ton, equivalent to 2,240 pounds.) Six-engined and said to be able to carry 160 passengers *plus* 30,960 pounds of freight and mail over transoceanic routes, the huge craft is frankly described as "a bid to re-establish the flying boat on the world's main air routes." Another of its principal technical features is a pressurized cabin for high altitude flying.

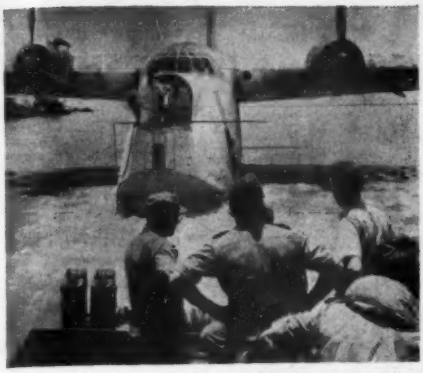
The plane will be able to cover 2,500 miles nonstop at an average cruising speed of 269 miles per hour, carrying the aforementioned number of passengers and weight of cargo. Should the number of passengers be decreased to 85, freight and mail will be increased to 57,700 pounds. *As an all-cargo craft, the* pay*load will be 90,960 pounds!*

Nonstop range is not limited to 2,500 miles. Blackburn's new seaplane is reported to be capable of extending its nonstop distance to 4,375 miles, providing the passenger maximum is scaled down to 85 and that of freight to 3,450 pounds. As a night plane, sleeping accommodations are designed for 45 passengers with a balance of space and capacity for an additional 15,125 pounds. It is pointed out that by reducing mail and freight by about a ton-and-a-half, the night plane will be able to take on an extra 27 passengers. Cruising speed for 4,375 miles is set at 280 miles per hour.

An official release, passed by the British censors, recently said this about Blackburn flying boat:

"Until the new design was announced it was widely believed that technical difficulties would prevent a flying boat from having an effectively pressurized cabin. In the new project, the problem has been solved by building a separate cabin and shaping the external structure of the hull to it. As at present planned, the cabin will maintain a pressure equal to that at 8,000 feet, while the flying boat is operating at 15,000 feet where conditions are most favorable.

"So far as is known, the Blackburn project



SUNDERLAND ON THE BRAHMAPUTRA —The picture shows a SUNDERLAND being towed to its moorings after a landing on the Brahmaputra River, India. BOAC has acquired 22 craft of this type from the Royal Air Force, and will be outfitted for civil flying.

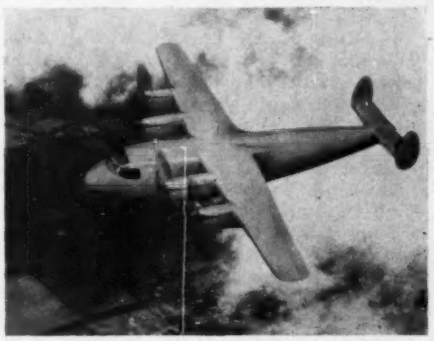
will be the first flying boat to seek the benefits of a pressurized cabin and to challenge the landplane at its own level. Other flying boats, built or planned, are intended to fly at lower levels, and at slower speeds. They may limit their bid for a place on the main routes to the carrying of freight or cargo, and not as airliners.

"It is generally assumed that structural and operational limitations will place the flying boat at a disadvantage in competition with the landplane until it can outstrip its rival in size. According to present information, the largest landplane airliner now on order weighs 320,000 pounds. The Blackburn enterprise, with an all-up weight short of that figure by only 10,000 pounds, should go a long way towards settling the issue. A comparison between the 142-(long) ton landplane and the 138-(long) ton flying boat may not provide conclusive figures, but it should at least deny or confirm the arguments of those who believe that the outcome rests upon size."

The aircraft manufacturer has emphasized the point that in spite of the size of its new air boat, a flight crew of only five will be required: pilot, co-pilot, navigator, radio operator, and engineer. Stewards or stewardesses will vary with the number of passengers aboard.

It appears that the designers of the craft have not settled upon any one plan of the interior arrangements. One, however, is mentioned prominently: a two-deck design for 85 passengers. The upper deck is reserved for the operational cabin, rest room for the crew, galley, and freight compartment; the lower for passengers whose seats will be separated into two compartments connected by a central passage flanked by toilet facilities and dressing rooms, a passenger salon, entrance hall, and baggage compartment.

Talking about seaplanes, the British overseas Airways Corporation's fleet of a dozen craft of this type is soon to swell to 34, ac-



THE MILES M-60—Designed by George Miles to the requirements set forth by the British Brabazon Committee, the M-60 will operate as a feederliner, carrying 14 passengers plus a crew of two.

AIR FORWARDING *European News* CONSULT A SPECIALIST

**BRITISH & FOREIGN MARITIME AGENCIES LTD.**

*Over 30 Years' Experience*

GENERAL FORWARDING — INSURANCE — CUSTOMS CLEARANCE, ETC.

Agents for all well known European Airlines—including

BRITISH OVERSEAS AIRWAYS CORPORATION and
K. L. M. Oldest Airline in the World

LONDON, E. C. 3 37/8, Fenchurch Street Telephone: Mansion House 6585 (12 Lines) Telegrams: Mizzenmast London (Overseas)

cording to the best information on the other side of the Atlantic. Twenty-two military *Sunderlands* are leaving the service of the Royal Air Force to follow more peaceful pursuits. (Incidentally, the Blackburn flying boat is more than six times the weight of the *Sunderland.*)

Recently BOAC effected a trial commercial flight of a *Sunderland*, carrying a full load of passengers and freight from Poole, England, to Karachi, India, *sans*, the usual luxurious appointments. The distance of 5,039 miles was flown in 33 hours and 52 minutes of which actual flying time was 28 hours. Reaction? The report says: Very good!

The next step will be to fit the additional *Sunderland* with the comforts and elegance demanded by modern air transportation. BOAC is planning to introduce shortly day-and-night flights between the United Kingdom and India. While the trial run between Poole and Karachi averaged 180 miles per hour, the scheduled average is expected to be in the vicinity of 165 miles per hour—or well within two days from starting point to destination.

*Shades of Clive!*

Meanwhile, a late flash from England declares that the payload of the Handley Page *Hermes* has been upped 5,000 pounds. The mentioned figure is 15,950 pounds (for a distance of 1,740 miles); but turning back the pages of AIR TRANSPORTATION to the issue of November, 1944, it is interesting to note that as far back as seven months ago the craft was revealed as capable of carrying a payload of 16,000 pounds, which, naturally, points up the latest report as no great revelation, insofar as strict news is concerned. However, can it be that the *actual* payload of the *Hermes* reaches 21,000 pounds?

There is no new word on the Miles M-60, British feederliner designed by George Miles. It will be able to carry 14 passengers plus a crew of two. The M-60 may be fitted with a pressurized cabin.

CIVIL SISTER OF THE LANCASTER — The LANCASTRIAN is a nine-passenger air transport suitable for speedy, long-distance hops. It has a range of 4,000 miles.

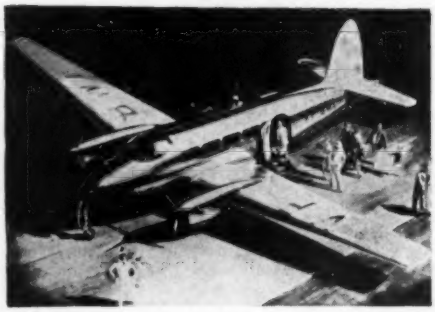
BOAC's *Lancastrian*—peacetime version of the famous *Lancaster* bomber—is already in service. Seventy-six feet and 10 inches long, the plane has a gross weight of 65,000 pounds, which includes 3,174 gallons of fuel, 495 pounds of passenger baggage, and 1,572 pounds of mail or freight.

While at the present time the *Lancastrian* seats nine passengers comfortably—all high-priority, of course—further modifications are anticipated. It is essentially a high-speed carrier, having a maximum speed of 300 miles an hour with a range of 4,000 miles.

For some time there has been some talk of the de Havilland *Dove* (DH-104)—a small feederliner which holds the highest priority on the company's civil program. An artist's sketch of the prototype has just been released.

The *Dove* will carry eight passengers with toilet accommodations, fore and aft freight compartments, and a crew of two. Elimination of the toilets will add two passengers, or 11 if the aft luggage compartment also is eliminated. No weight or performance figures were released up to this writing. Besides serving as a feederliner, the *Dove* is publicized as excellent for charter traffic, executive travel, and as a private aircraft.

The personal plane has not been neglected. Indications overseas point directly to some "startling newcomers" to the field which will vie for honors in style, safety, and economy.



DOVE FOR A PEACEFUL ERA — The de Havilland DOVE stands topmost in the company's list of civil aircraft. It will hold nine to 11 passengers, depending upon interior arrangements.


**FOREIGN AIRLINES REPRESENTATIVE AVAILABLE**

Long experience as an agent for foreign airline and aircraft organizations. First-hand knowledge of flight arrangements and maintenance supplies. Established in New York foreign trade circles since 1932. Additional agencies are invited. Phone, write, or cable your needs to PAUL A. PLENDER, 29 BROADWAY, NEW YORK 6, N. Y. (WHITEHALL 4-3972), or at the CONGRESS BUILDING, MIAMI, FLA.

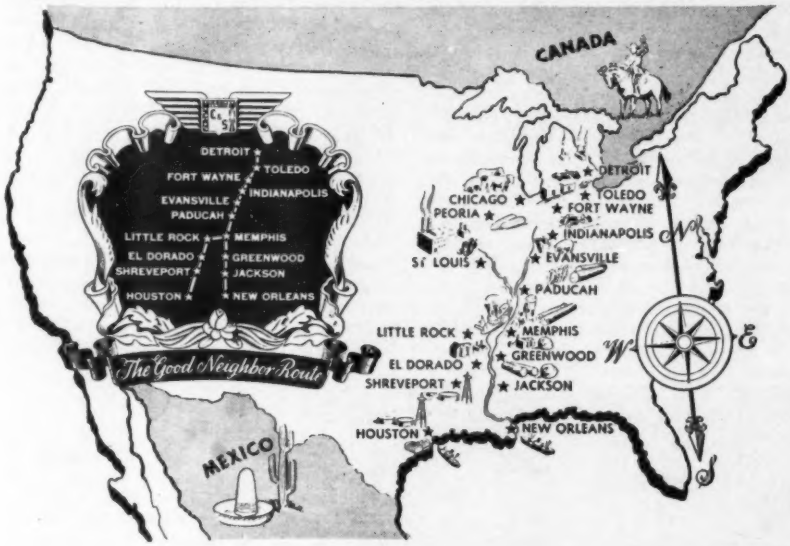
# *Announcing*

## *THE "GOOD NEIGHBOR" ROUTE*

### A *NEW* CHICAGO AND SOUTHERN SERVICE

### *Starting June 1, Linking*

### *DETROIT, MEMPHIS, HOUSTON and NEW ORLEANS*




JUNE 1 of this year marks the inauguration by Chicago and Southern Air Lines of a vital new route. This new service will contribute to the war effort from both the military and industrial point of view and also from the larger, less tangible, but highly important standpoint of hemispheric good will and solidarity. Chicago and Southern now serves both Houston and New Orleans, and the shortest distance to both of these ports from the largest Canadian centers, as well as from Detroit and Indiana and Kentucky points, lies directly through Memphis over the already-established lines of the company. Providing a long needed air link between the North and South American continents, this is truly the "Good Neighbor" Route.

## *CHICAGO AND SOUTHERN Air Lines*

DETROIT • TOLEDO • FORT WAYNE • INDIANAPOLIS
EVANSVILLE • PADUCAH • LITTLE ROCK • SHREVEPORT

HOUSTON • CHICAGO • PEORIA • ST. LOUIS
MEMPHIS • GREENWOOD • JACKSON • NEW ORLEANS

# AIRDOM

By Richard Malkin

(Trade Mark)

## STYLE+SPEED=SALES

MR. SMITH is a salesman whom I know quite intimately. (Smith is not his name, of course, but it will serve to retain the desired anonymity.) The gentleman represents one of America's largest knitting mills, and it has been one of his regular duties to sell summer merchandise when the snow blankets the earth and winter merchandise when the flowers are in full bloom.

This is hardly a strange practice, since the mills require a great deal of leeway to produce, pack, and ship the seasonable goods in time to meet the retailers' and eventually the consumers' needs. On the surface this may appear as a highly efficient expedient, but Mr. Smith's biggest headaches occur during the heart of each selling season: for when his customers are eager to duplicate certain style numbers, the looms already are busy turning out other types of merchandise. Thus, neither Mr. Smith nor his customers can be sure of how completely the reorders will be filled.

The mills usually base their production output on the previous year's business. Stylized merchandise are bad carryovers from one year to the next, for these mean drastically reduced prices often entailing losses. It is a difficult problem trying to foresee the next year's business and gauging production accordingly.

Mr. Smith was utterly bedeviled one year when a rival organization put out a summer sports garment whose design created a rage in the open market. The garment which he had sold several months earlier for later delivery was of similar style but of a wholly different design. There had been no way of telling beforehand which garment would make a hit until the season arrived and the consumers started pouring into the neighborhood shops and department stores.

Under ordinary circumstances, a new batch of garments utilizing the hit design could have saved the day. But his organization was deep in the throes of winter manufacture, and those looms that were open for summer work were

EYE-CATCHING FOURSOME — These pretty lasses model different styles of air-shipped frocks. Serving as a background are an American Airlines AIR-FREIGHTER and cartons of printed fabrics destined for Los Angeles.

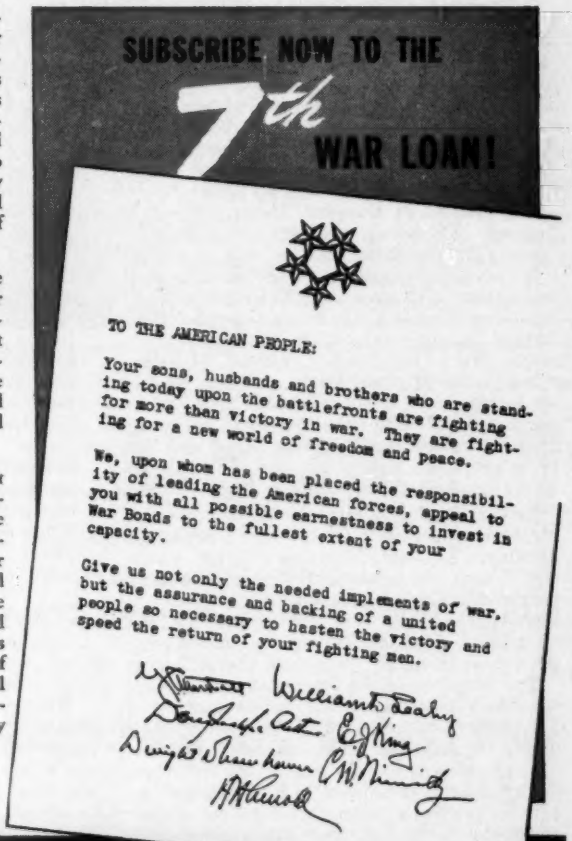
# BONDS

## OF WAR, OF VICTORY, AND OF WORLD PEACE

BY PURCHASING War Bonds, Americans on the work front reaffirm their unbreakable bond with their fellow-Americans on the battle front. And, as we of this nation keep strong our bonds with each other, we establish, simultaneously, an example of freedom and democracy-at-work for all the world to see. Our model of practical democracy stands as irrefutable evidence that a good life *is* possible, that the brotherhood of man is more than a catch phrase.

As men set about to convert peace *ideals* into peace *facts*, they have at their disposal a potent force, with unprecedented possibilities for the betterment of civilization: global air transportation. The movement of cargo and people by air will hasten reconstruction and will aid immeasurably in creating and maintaining a world at peace.

In this connection, we believe that American Airlines' Airfreight—both national and international—illustrates the usefulness of swift, economical transportation of cargo by air. Within our national boundaries, Airfreight will aid in the creation of new markets and the expansion of existing markets, and will facilitate transportation of many kinds of merchandise. As an instrument of international shipping (International Airfreight now is available to Mexico—in limited capacity for non-priority cargo), we are confident that it is helping to strengthen the bond between two great neighbor nations.


SUBSCRIBE NOW TO THE
7th
WAR LOAN!
TO THE AMERICAN PEOPLE:
Your sons, husbands and brothers who are standing today upon the battlefronts are fighting for more than victory in war. They are fighting for a new world of freedom and peace.
We, upon whom has been placed the responsibility of leading the American forces, appeal to you with all possible earnestness to invest in War Bonds to the fullest extent of your capacity.
Give us not only the needed implements of war, but the assurance and backing of a united people so necessary to hasten the victory and speed the return of your fighting men.

# AMERICAN AIRLINES *Inc.*

THE NATIONAL AND INTERNATIONAL ROUTE OF THE FLAGSHIPS

seriously handicapped by slow transportation. Seasonal goods are, at best, sold during a high-season period of a few weeks.

I haven't seen Mr. Smith for some time, but I have no doubt that he is aware of what the air transportation of seasonable goods will mean to him and to the many thousands like him, as well as to millions of consumers. In the past, when Mr. Smith found himself in a hopeless quandary, he'd exclaim half-facetiously:

"Heck! You can't expect the goods tomorrow! You'd need an airplane for that! . . ."

Well the airplane is here! And it took a group of far-sighted men to carry through to startling perfection what only a few months ago was a glimmer in the optimistic mind of someone. These men were J. A. Wooten, cargo-traffic manager for American Airlines; Herbert Katzman, president of Renoir Fabrics; Sol Blum, president of Twentieth Century Frocks; Julian K. Morrison, president of Brighton Mills; and Bernard Waldman, president of the Modern Merchandise Bureau.

It was on a Monday, on an off-line route, that a charter AA *Airfreighter* landed on Russell Field, Rome, Georgia, to take on more than 6,000 pounds of rayon fabric for ladies' dresses. Manufactured in the Brighton Mills, the "grey goods" were shipped in tight rolls with metal strips binding them. The time elapsed to bring the goods to LaGuardia Field was four hours and 19 minutes. A similar shipment by rail requires somewhat more than a day.

Renoir Fabrics, a large New York converting company, picked up the rayon goods for printing. The "grey" became colorful *American Travelcade* prints and were immediately prepared in oblong cartons for air shipment to Los Angeles. An AA *Airfreighter* did the trick in 15 hours and 26 minutes, transporting the fabric in roughly one-sixth the rail time.

The next step in the process of manufacture was the various operations in the making of Twentieth Century Frocks' *Miss Hollywood* dress. Already ahead of schedule, the company produced the dresses in record time. Each garment was placed in a cellophane bag and the entire lot transported to the airport where the finished product was transferred to a special light-weight rack fitted into a waiting *Airfreighter*. This expedient saved another ironing job after the dresses arrived in New York.

Added costs? Of course! But there is this great difference: where previously the detailed process of mill-converter-manufacturer-store deliveries hovered between four and five months, the time-lapse between the day the *Airfreighter* left Rome and the day the first department store received its consignment of *Miss Hollywood* frocks in *American Travelcade* prints was five weeks!

**MODERN DESIGN—Modeling one of the TRAVELCADE prints flown in rolls from New York to Los Angeles and back again in their final form is a winsome lass with an eye for planes. An American Airlines AIR-FREIGHTER did the job, even picking up the grey goods at Rome, Georgia, and transporting them to LaGuardia Airport in a fraction of the time required by other means. The entire job, from mill to store rack, saved months!**

What occurs first in the mind of the merchant is the costlier operation versus its time value. Do they balance? The answer is that the time value *outweighs* the higher cost of shipping by air—and there is no one better to attest to this than the Modern Merchandise Bureau whose representative reeled off to this writer a long list of big retail organizations placing glowing stamps of approval on post-war air shipment.

The experimental shipment by *Airfreighter* has paid dividends in an upsurge of interest which will be turned into dollars and cents after the war. Newspaper readers were treated to a surprise when, early last month, the ad columns proclaimed: "Fashions in

Flight. New-as-the-Minute Because They Are Air-Sped to You."

American Airlines is doing an interesting amount of trail-blazing in the virgin field of air freighting. Someone had to do the pioneering, and AA elected itself to the job. The line expects competition, and it is not turning its back on it. In the words of one AA official:

"Competition will hasten the development of air freight. There's plenty of business around for everyone."

And out of this whole subject emerges an exciting possibility—nay, a probability: *regular 24-hour air freight service on an international scale!*

## AIR-MINDED BOSTON

On May 1 the City of Boston became linked by air with every part of the United States. Two airlines—United and TWA—added their service to those supplied by American, Colonial, Eastern, and Northeast. Also on that day, NEA inaugurated nine round trips on the Boston-New York nonstop run. Today the latter trip takes only an hour and 15 minutes—just half the flight time previously required for the distance.

Boston, which calls itself the "Hub of the Air Universe," has displayed a consistent air-mindedness that has been the Massachusetts capital city's most efficient spark plug in preparing it for the Air Age. *The Boston Traveler*, in a recent editorial, stated in part:

"Our obligation is to keep our airport facilities abreast with progress in the fastest moving industry of them all. The opportunity we must seize flies by at 200 miles an hour."

*The Boston Globe*, in 1903, was one of only six papers in the United States attaching enough importance to the Wrights' first flight to dispatch a reporter to Kitty Hawk. Its interest in aviation has been maintained at an extremely high level. Seven years later, at Squantum, Massachusetts, the newspaper awarded a prize of $10,000 to Claude Graham-White of England for the startling feat of two nonstop flights of 33 miles each from the Squantum Airfield to Boston Light and back. This was an unprecedented stunt at the time, but *The Globe* read great significance into Graham-White's achievement. In 1911 the newspaper repeated its prize offer, and this time it was won by an American, Earle Ovington, who later became America's first air mail pilot.

Awareness of Boston's recognition of the part aviation is playing in the reshaping of the world is found in more ways than one. For example, the State Street Trust Company


J. BALL MILTON BALL

**J. BALL & SONS**

NEW YORK MAIN OFFICE

32 Moore St. — Tel. BOwling Green 9-0605-0606-0655

FOREIGN TRADE ZONE OFFICE: George Ball, Pier 53, North River

◈

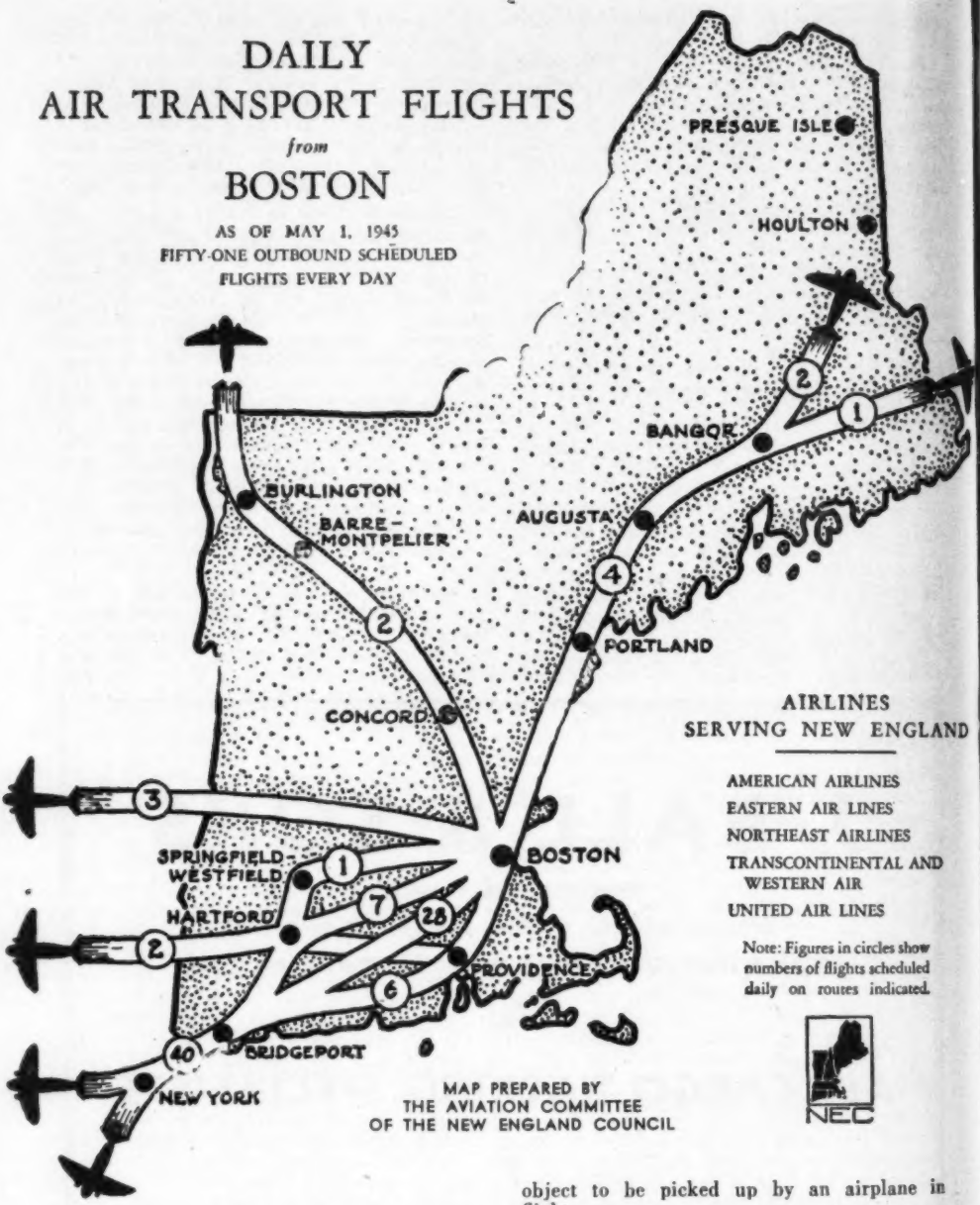
**AIR CARGO PACKING SPECIALISTS**

◈

IMPORT . . . EXPORT . . . PACKERS

MANIPULATING . . . COOPERING

| | | | |
|---|---|---|---|
| *Weighing* | *Labeling* | *Sealing* | *Cargo Repairs* |
| *Strapping* | *Marking* | *Baling* | *Cases Made* |




has sponsored an aviation exhibition at its main office in a manner which emphasizes the bank's own reliance on air transportation. Aside from photographs and models of modern planes are items of especial interest, such as a piece of fabric from the first German plane brought down by Captain Eddie Rickenbacker, now president of EAL; and the first object to be picked up by an airplane in flight.

The story of the first balloon flight over the English Channel presents a fascinating tie-up with Boston. A Bostonian, Dr. John Jeffries, was one of the two passengers when the balloon made history 160 years ago. In his pocket he carried the first air mail letter from England to William Temple Franklin, grandson of a former Bostonian then in France,

## THERE ARE NO SIDETRACKS IN THE SKY

CARGO by the ton flies straight to its destination in the "Packet," the Army Air Forces' cargo carrier designed by Fairchild and built by Fairchild and North American Aviation.

Into the spacious hold of Fairchild's "Packet" will go lethal loads of guns, tanks, paratroopers, ammunition and supplies—destination Japan.

It is nicknamed the "flying boxcar" because of its cargo capacity—2,312 cubic feet of space—and its ability to carry up to nine tons at speeds which are still restricted information. Its maximum range, with conservative loads, is approximately 3,500 miles.

Forty-two paratroopers with full equipment can be "delivered" through two rear jump doors, clear of any obstruction. An ingenious device sends equipment parachuting through special doors in the belly, simultaneously with the paratrooper's jump.

The "Packet" is loaded with extreme ease. The floor of the fuselage is parallel to the ground and at standard truck floor height. Two 2100-horsepower engines impel its flight on wings that span more than 106 feet. Its overall length is more than 75 feet and its height 26 feet.

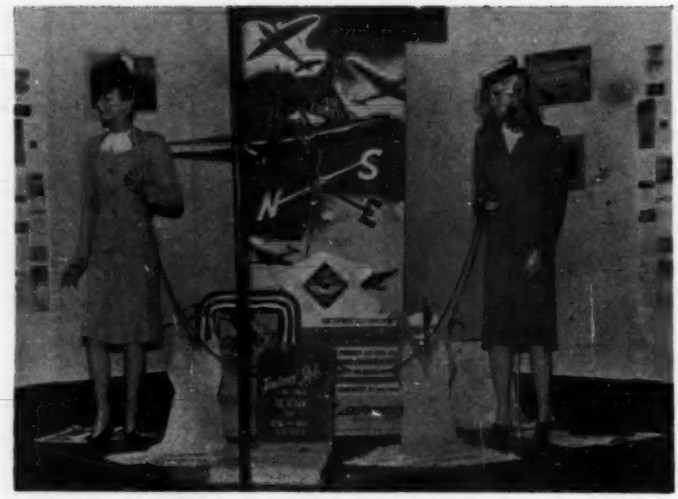
With but minor changes, it will become an efficient and profitable carrier of cargo and passengers in peacetime, flying the main lines with never a wait on a siding.

All metal in construction, this flying boxcar possesses characteristics inherent in all Fairchild products, "the touch of tomorrow in the planes of today."

BUY U.S. WAR BONDS AND STAMPS

**Fairchild Aircraft**

***Division of Fairchild Engine & Airplane Corporation, Hagerstown, Maryland***



IT'S THE GOODS—A Haverhill, Massachusetts, department store features in its display window merchandise sent via Air Express from New York to Boston as a part of the new flight service to the Hub.

Special Representative Benjamin Franklin.

The State Street Trust Company has gone even farther in its effort to place the accent on air. Its checks now bear a pictorial history of aviation—from the earliest balloon to the Martin *Mars* and the Douglas DC-3—and the suggestion of an airport and seaplane base. Upon this is superimposed the usual requirements of the ordinary bank check.

Topping the activities was the initiation of Aviation Week by that wide-awake body the Boston Chamber of Commerce. The high-water mark was reached on May 1 when the new air service to Boston was welcomed at an official luncheon while those already serving the city received due honors.

STARTING ON A "FIRST"—Boarding a transport on Northeast Airlines' New York-Boston inaugural flight last month were (left to right) E. L. Vidal, NEA director; Mrs. Vidal; Charles Taxier, NEA traffic representative; M. Delman, president of Delman Shoes; Pat Cummings, Railway Express Agency; J. C. Collins, TWA regional manager; R. C. Morgan, publisher of TRAVEL AGENT; M. Levy, American Legion, Indiana; Norman Crowley, vice president of the American Express Company; John F. Budd, publisher of AIR TRANSPORTATION and chairman of the Aviation Section, New York Board of Trade; Fowler Barker, editor of AIR TRANSPORT; Perley Boone, publicity director of the Air Transport Association; William Wolfe, president of Wolfe and Roberts; Rufus Maddux, vice president of Mutual Broadcasting; and Daniel H. Ecker, secretary of the Aviation Section.

## Commissions and Brokerage on Air Business Will Be Paid by Britain

AIR companies in the United Kingdom and on the Continent will continue paying full commissions and brokerage on passengers and cargo, according to Dennis H. Handover, air adviser to the British Railways, who was interviewed last month by John F. Budd, publisher of *Air Transportation.*

"In the United Kingdom," Mr. Handover said, "the distances are so short and the railway transportation so good, that it is not very likely that there will be a vast volume of air cargo. But there will be certain specialties which will benefit by air transport, particularly where this transportation can be tied up with the express service arrangements of the British Railways Organization."

The Briton's exclusive statement came in reply to a specific question by Mr. Budd on a subject which still is an unsettled issue in American forwarding and air cargo circles. Mr. Handover declared that there was no intention of "upsetting custom in this respect."

He added that the British Government is satisfied that the arguments in favor of uniting the internal services of the United Kingdom and services from the United Kingdom to Europe in a single company are "overwhelming." It has been proposed by official quarters that agreed schedules of United Kingdom and European routes be assigned to a new company comprising the railways companies, travel agencies, Short Sea Shipping Lines, British Overseas Airways Corporation, and several other prewar independent air operators desiring to participate.

It was learned that plans include a total of some 100 routes within England, Scotland, and Wales. A "comprehensive network of services throughout the Continent" is awaiting Government ratification.

"The new company, following the traditions of its major participants, will be carriers of passengers, mails, and air cargo," Mr. Handover stated. "It is intended to set up an extensive organization with the assistance of the travel and forwarding agents to provide


For over fifty years export freight shipments have been handled by barge or by rail or by motor truck, and by sailing ship or by steamer. Now it is the AIR—and through a new streamlined department created to serve you

USE ANDREWS SERVICE VIA ALL PORTS

**D. C. ANDREWS & CO., INC.**

**27 and 29 WATER STREET, N. Y.**

***Forwarding Agents • Custom House Brokers***
***Freight Contractors & Brokers***

BOSTON BALTIMORE CHICAGO NEW ORLEANS SAN FRANCISCO
MEXICO—Mexico D.F.; Monterrey, N.L.
BRAZIL—Rio de Janeiro; Sao Paulo
ARGENTINA—Buenos Aires

**D. C. Andrews, Ballantyne & Co., Ltd.**
LONDON LIVERPOOL GLASGOW

fullest facilities over the widest possible network."

He concluded that the intention of the new company would be to "cooperate to the full with all foreign companies serving the same territory." Particular attention would be paid to "the requirements of the expected vast number of American visitors to the British Isles and the Continent, who would no doubt find this network of feeder services to the Continent invaluable."

Mr. Handover, who paid a flying visit to New York, is considered one of Britain's most experienced traffic experts. Formerly with Instone Air Lines, he served for more than two decades as traffic chief of Imperial Airways and later of BOAC.

## B. K. Gardiner in U. S. To Re-establish Connections

B. K. Gardiner, manager of England's & Perrott's, one of the major forwarding concerns in the United Kingdom, has been in this country renewing contacts with his company's prewar customers and also to establish new connections. His itinerary included Montreal, Toronto, Baltimore, Philadelphia, and New York.

Interviewed at the New York headquarters of England's & Perrott's United States agents, Bluefries-New York, Inc., 44 Whitehall Street, Mr. Gardiner declared that the close association between Britain and this country during the war has increased their natural unity. His company, he said, is "in a position to offer unusual advantages in supplementing air and steamship services."

England's & Perrott's has more than a century of experience behind it. The organization is engaged in air-sea packing, forwarding, storage, weighing, sampling, and travel service.

## New York to India— Daily 46-Hour Schedule

When you think of international air transportation in terms of cargo and passengers, think big! And if an example is at all necessary to stimulate such thinking, witness the daily 46-hour schedule between New York and India.

This is no bright dream of an aviation enthusiast, but an actual service under the Air Transport Command which is as real as this morning's breakfast. Sensational? Of course! But that's what the whole history of transportation-by-air is. The new air service between the metropolis and the teeming British colony on the other side of the world is open to fare-paying passengers as well as to high-priority military personnel and cargo.

The first lap, between New York and Casablanca, is covered in 21 hours. This is a trip of 3,773 miles, made by the latest-model Douglas *Skymaster*—the C54E. The balance of 4,817 miles, over the famous Skyrocket Route, from Casablanca to Karachi, is spanned in somewhat less than 25 hours. Brief stopovers are at Tripoli, Cairo, and Abadan.

The *Skymasters* carry payloads of 10,800 pounds each on 1,500 mile nonstop hops. This includes 30 passengers and a crew of five.

**BONDS FOR VICTORY**
***subscribe to***
**THE MIGHTY SEVENTH**

VIVID CONTRAST — A Douglas SKYMASTER, Karachi-bound, passes over an Arab farm after its take-off in French Morocco. This is one of the Skyrocket fleet of planes connecting Casablanca with India. A New York-to-Casablanca run, connecting with the Skyrocket Route, makes possible a 46-hour trip from New York to India.

**MORE PLANES** are being put into regular scheduled Airline service, which means more space is available *now* for all important types of traffic.

**MORE SPEED!** Between all U. S. cities and principal towns, your shipment not only travels at a speed of three miles a minute but it also receives special handling at both ends—special pick-up and delivery, at no extra charge. Deliveries are often made the same day.

**MORE COVERAGE!** More points in the United States and scores of foreign countries are served directly by air—while shipments to 23,000 off-airline points in the United States are handled through rapid air-rail schedules.

**LOWER COST**—actually lower than before the war! Air Express carries 25 lbs., for example, more than 500 miles for only $4.38, more than 1,000 miles for $8.75.

**WRITE TODAY** for "Quizzical Quizz," a booklet packed with facts that will help you solve many a shipping problem. Railway Express Agency, Air Express Division, 230 Park Avenue, New York 17. Or ask for it at any Airline or Express office.

AIR EXPRESS

AIR EXPRESS

GETS THERE FIRST

**Phone RAILWAY EXPRESS AGENCY, AIR EXPRESS DIVISION**
**Representing the AIRLINES of the United States**

**PROPOSED TERMINAL SITE—Deep in the heart of Brooklyn, with all surface transportation facilities, warehouses, and big department stores close at hand, is the Long Island Railroad depot (right foreground) which has been proposed as a combination terminal by John F. Budd. An airstrip for light planes and helicopters would be laid over the railroad tracks visible in the background. The terminal would give Brooklyn direct connections with all the major airports in the metropolitan New York area.**

## Budd's Proposal for a Brooklyn Air-Rail-Bus Terminal is Greeted With Favorable Reaction

ADDRESSING members of Group V of the New York State Savings Banks Officers Association, John F. Budd, publisher of AIR TRANSPORTATION and chairman of the Aviation Section, New York Board of Trade, last month revealed his plan of an air-bus-rail terminal for the Borough of Brooklyn. Included in his proposal was the suggestion to build an airstrip for light planes and helicopters, to be situated directly behind the terminal.

Mr. Budd's recommendations, which were buttressed by considerable facts on New York's biggest of its five boroughs, won immediate attention in the press. *The Brooklyn Eagle* supported him ardently, front-paging the story.

Pointing to the present site of the Long Island Railroad depot, at the intersection of Atlantic and Flatbush Avenues, the speaker proposed to use that spot for the terminal. The central portion would be given over to a large rotunda divided into three sections, each for passengers seeking one of the major methods of transportation. According to Mr. Budd's plan, bus passengers would use the rear part of the terminal, and rail passengers would descend to the lower level to meet their trains. Air travelers would ascend to the upper level in order to board small intrastate planes or feederliners scheduled to meet long distance aircraft at LaGuardia and Idlewild Airports as well as at other large fields in the metropolitan area.

AIR-MINDED TRIO—Publisher John F. Budd of AIR TRANSPORTATION (center), who doubles as chairman of the Aviation Section, discusses his plans for an air-bus-rail terminal in Brooklyn with Clinton L. Miller (left), assistant secretary of the Dime Savings Bank, and Charles Hasloecher, assistant secretary of the Cypress Hills branch of the Hamburg Savings Bank.

He suggested that an airstrip be laid down over the present submerged tracks of the Long Island Railroad.

The aviation publisher told the bankers that he had always considered it "rather silly" that the residents and businessmen of New York's biggest and most populated community had to travel in a wide arc, from Brooklyn through Manhattan to Queens, in order to reach LaGuardia Airport which actually was its neighbor. He urged rapid transit from Brooklyn as the best means of correcting the existent situation.

In his argument for the need of a combination terminal, Mr. Budd explained that Brooklyn's population comprised 36 percent of that to New York City. If Brooklyn were a city, he declared, it would be exceeded only by New York and Chicago. Thirty States fall below the borough, while four others approximate its population, adding that the combined populations of Arizona, Nevada, Vermont, Wyoming, New Hampshire, Utah, and Montana equal Brooklyn's.

"Fully 12½ percent of all Baltimore & Ohio Railroad traffic into New York City is destined for Brooklyn," he emphasized. "This figure looms even higher when we consider that it is not only 12½ percent of New York City proper, but that of the whole metropolitan area of New York—that is, a populated district of 11¾ millions, not the 7½ millions as we know it.

"The Borough of Brooklyn is not a back-number when it comes to business and industry. Witness its great department and chain stores, shipyards and factories. As a unit it is one of the most important industrial cogs in the national machine. Nearly 5,000 establishments are manufacturing products in this community to the tune of a billion dollars a year. Witness, also, the great local transportation system—railroads, subways, buses, and trolleys."

Although the high spot of Mr. Budd's speech was reached with his first public announcement of the proposed air-bus-rail terminal project, the greater part of it was devoted to a comprehensive survey of world aviation based on his contention that the Air Age is already here, not just coming. He cited such big transports as the Martin *Mars*, the Douglas *Stratoliner* and *Strocruiser*, the Fairchild *Packet*, the Consolidated Vultee *Model 37*, the Boeing C-97, and the Curtiss-Wright *Commando*. Mr. Budd also touched upon the subject of gliders as well as upon the prospects for regular air shipments of perishables. In connection with the latter, he praised highly the work done by Dr. Stephen A. Larsen in cooperation with United Air Lines, the A & P Stores, and the Evans Products Company.

## NWA Announces Typical Fares

Typical fares from Seattle and Portland, as announced by Northwest Airlines which this month inaugurates transcontinental flights into New York, are $124.75 one way and $237 round trip.

From Minneapolis-St. Paul, the fares are $48 one way and $91.20 round trip, from Milwaukee, $35 one way and $66.50 round trip; from Detroit, $23.45 one way and $44.60 round trip.

**WE ARE HIRING** Draftsmen-Designers, Engineers, Model Builders and Engineers, Loftsmen, Aerodynamicists, Stress Analysts. If you are not already in essential war work, there is still a big job to be done on famous P-51 Mustangs and on secret planes of advanced design. Telegraph or write today to Engineering Dept., North American Aviation, Inc., 5601 Imperial Highway, Inglewood, Calif.

# IT'S AN *Air* WORLD

REG. U. S. PAT. OFF.

*By* L. A. GOLDSMITH, *Economic Analyst*, AIR TRANSPORTATION

AN all-Indian owned advertising agency, the Press Syndicate, Ltd., of India, with its main office at Calcutta, has recently opened an American branch office at 103 Park Avenue, New York, under the direction of Major R. Stuart Murray (G.S.C. Ret.). In addition to a bewildering array of achievements in engineering and advertising, international marketing, documentary motion pictures, geographical expeditions, and military service, Major Murray can also be counted in as an aviator, having once been a pilot.

## India Stepping Up and Out Into Modern Industry—Advertising and Air Age: Air Cargo Potentialities

The establishment of a New York branch of a foreign advertising agency is quite an innovation and the reverse of the usual process—an Indian-owned company setting up an American office to "service" American clients with first-hand information regarding India's broad and expanding market possibilities for United States goods and products. The Press Syndicate, founded eight years ago, operates as a general advertising agency in India for such industrial clients as Tata Steel, Martin & Co. Ltd., the Imperial Bank of India, the Government of India, etc., etc. This agency has specialized in developing consumer markets throughout India for products such as steel, textile, cement, hydro-electric, airlines, chemicals, railways, public utilities, engineering, and ceramic industries.

To develop advertising effectively in India, it may astonish American industrialists and manufacturers to know that you have to say it with many languages—TEN of them—in order to get really productive results. Of course there are hundreds, almost innumerable quantities of dialects spoken throughout India in its various provinces and the autonomous "kingdoms" of the independent princes and rajahs. However, with the use of nine Indian major languages plus English, the advertiser can get along!

R. Stuart Murray

First among these essential languages are:

HINDI and URDU, which two in effect form *Hindustani*, understood practically all over India. Local custom, however, demands that the following seven also be used. These are:

GUJARATI and MAHRATTI: both used in Bombay and vicinity.

BENGALI: spoken in the province of Bengal.

KANARESE: spoken on the West Coast of India.

TELAGU: spoken on the East Coast, above the city of Madras.

TAMIL: spoken on the West Coast, below the city of Madras.

ASSAMESE: spoken in the Province of Assam.

These nine Indian languages in addition to English make up the essential ten in which to create presentations and promotions for your American goods.

When it comes to two-way traffic for trade with India, a very interesting angle comes to light, and that is the possibilities of air cargo in connection with Indian products coming our way. For instance, when Major Murray was asked what products he thought would be available for air transportation, he mentioned the following as distinct possibilities: industrial chemical concentrates (India is developing rapidly in the utilization of her chemical raw materials); essential oils; seeds (such as psyllium and other important varieties not only in medicinals but also in vegetables and flowers); costly items such as ivory, expensive silks and embroideries, precious stones, rare woods, curios, and silverware. And above all, vital materials such as lacquers and mica.

## India — a New Focal Point For Future Strategic Sales And Purchases in World Trade

Speaking of mica brings home the fact that India has become a focal point of world strategy and strategic materials, as well as supply center for the armed forces—our own, and those of our allies. Today there is a great and growing activity in India—the building of airfields and highways, and the expansion of factories for war purposes and the production of materials of war. All of this is expected to contribute largely to India's increased purchasing power in peacetime.

India, today, is the largest producer of boots and shoes and the second largest producer of iron and steel in the British Empire. Coal mining is the most important mineral industry. India also ranks as the second largest producer of manganese in the whole world, coming right after Russia. And, of course, India has long been known as the largest and most important producer of mica, one of our *must* war materials, to say nothing of its value for peacetime production. Mica is essential in the operation of all modern mechanized equipment. Every plane, tank, or ship must have it. While mica is obtainable in various parts of the Western Hemisphere, even in the United States, it is upon India that we depend on the mineral for certain definite strategic uses, such as airplane spark plugs and washers, as well as for radio tubes, and magneto condenser films.

Only a little over two percent of India's population is at present employed in factory production, but even this infinitesimal percentage figures out to something more than eight million people. In the postwar period these eight millions will have their purchasing power greatly stepped up—both for goods manufactured locally as well as for the imported kinds.

Of course this number now in factory production is an addition to the already considerable number of people who were purchasers of imported goods heretofore. Just as a matter of comparison and evaluation with another country's population, consider Australia. Australia's *total* population is only slightly over seven million, and Australians are *very good customers, indeed* for American merchandise. Therefore, when we stop to evaluate India's increased purchasing power, let us forget about small percentages in terms of population and concentrate on the thought of the added millions earning money in steel and cotton, electrical equipment and even machine tools, and believe it or not, in airplanes! This latter, of course, may only be a war emergency measure and presumably airplanes manufactured in more highly industrialized countries would seem to have the benefit of price because of larger quantities in production, still it will have been done, and therefore watch out for India and see her grow into an industrial force to be reckoned with. As a future force in the economic affairs of the world, India can be counted on to take her place as a political force, who knows?

---

### PCA Nonstop Flights

Six daily departures from LaGuardia Field are now being provided by PCA. Each offers nonstop service to Pittsburgh. Three are making express-type flights to Chicago and three to Birmingham, Alabama.

### New Group Set

Air Education, a non-profit foundation, to stimulate a comprehensive, coordinated program of education in the aeronautical arts and science, has been organized. Its chairman of the board is A. J. Stoddard, Philadelphia's superintendent of schools.


**KENNETH KITTLESON**

*Customhouse Broker and Forwarder*
*Steamship and Airline Freight Agents*

"ACCUSTOMED TO YOUR 'CUSTOMS' PROBLEMS"

★ ★ ★

404 Zack Street . . . Room 2 . . . P. O. Box 2009

**TAMPA 1, FLORIDA**

PHONES: 4310 — M - 1763

# Economic Factors in Rate-Making

***A brief but very apt discussion which should be of particular interest to the shipper. The establishment of air rates must take into consideration the shipper, the carrier, and the bodies administering public policy. But here are where the economic factors come in.***

By W. Delaney Dilworth
*Rate and Tariff Analyst, Air Cargo Department*
*United Air Lines*

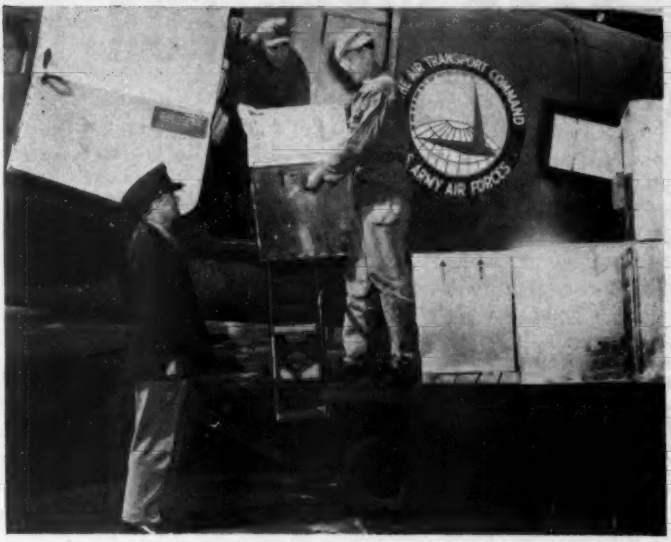
A COMMON carrier is engaged in selling one commodity—transportation service. The price charged for this commodity is called a rate and the price lists are called tariffs. The primary objective in rate-making is to establish rates which will generate the maximum traffic volume commensurate with a reasonable profit. Determination of these rates demands consideration of both private and public welfare. Rates must be sufficiently high to assure the carrier a reasonable profit, yet not so high as to place an unreasonable burden on the public, and the rates must also comply with the regulations of the bodies administering public policy. In establishing rates which will meet these requirements, cognizance must be taken of certain economic factors in rate-making.

Maximum profits devolve from either higher prices, lower costs, or an increased volume of business. High prices result in the diversion of business to competitors whose prices are less. In a freely competitive struggle, however, to maximize business and retain a reasonable profit, the producer is forced to charge the minimum price possible for his service while still meeting all costs. If the air transportation industry is one of decreasing costs, then *lower costs will naturally result from an increased volume.*

The cost of performing the service and the value of the service rendered are the basic economic factors governing the determination of rates. If the rate charged exceeds the value of the service, the traffic will not move; if the rate charged is lower than the cost of the service, the carrier cannot afford to move the traffic. The cost of service is divided into: (1) variable or out-of-pocket costs which, over a period of time, vary directly with the volume of traffic, and (2) constant or overhead expenses which, over short periods at least are independent of the volume. As constant costs remain the same regardless of the amount of traffic, the out-of-pocket costs establish the minimum rate level. The value of service controls the demand at a given rate level and establishes the maximum rate that will move the traffic.

Another important economic consideration in rate-making is the relation of rates to distance. This subject has been under discussion from inception of the railroads, one of the earliest treatments being Dionysius Lardner's *Railway Economy*, 1850. After pointing out that the cost of rail transportation is not in the ratio of the distance traveled because a

*(Concluded on Page 57)*




NEW CONTAINERS DO THE TRICK—Brigadier General Fred W. Rankin (left), director of the Surgical Consultants' Division of the Army Medical Department, watches loading of ATC transport plane which carried the first shipment of whole blood that will last 21 days. Staff Sergeant Edward Steffen of Shawano, Wisconsin, hands the new-type container to Corporal Sal Cascriorizzo of Long Island, New York.

## Iced Containers Add 5 Days To the Life of Whole Blood

Now that the war in Europe is a thing of the past, a newly developed method of refrigerating whole blood—one of the greatest single factors in saving the lives of wounded soldiers—probably will be set up for the Pacific theatre.

Until a short time ago, a limit of 16 days was placed upon whole blood suitable for transfusion, but under the new plan its life has been extended by five days. The secret is expendable iced containers developed to keep the whole blood at the correct temperature: not below 39 degrees Fahrenheit, or above 50 degrees.

Each container is provided with insulation which insures the necessary temperature. A total of two-dozen bottles, each of which has a capacity of about one-and-a-half pints of whole blood, fit into a single container. The container is made of metal foil on cotton insulating board with wire racks inside, as well as a compartment for ice. One container filled with 24 bottles of whole blood reaches a weight of 105 pounds.

The new system was inaugurated at New York and Washington, D. C. The whole blood is collected at Boston, New York, Brooklyn, Baltimore, and Washington. Up to the cessation of hostilities in Europe about 1,200 bottles a day were transported by air—that is, about 50 containers weighing 5,250 pounds.

Truck-plane coordination completed the system of overseas transportation. Special refrigerated trucks met the planes as soon as they landed, shifted the cargo, and sped it to forward areas.

**AIR** CARGO INSURANCE CARRIERS LIABILITY **PROBLEMS**

IN INTERNATIONAL AIR TRANSPORTATION

EXPERTLY HANDLED BY

**HAGEDORN & COMPANY**

INSURANCE BROKERS AND AVERAGE ADJUSTERS

*Founded 1869*

60 Beaver Street
N. Y. Cotton Exchange Bldg.

NEW YORK 4, N. Y.

Telephone
BOwling Green 9-1100

# FAST WORK FOR FRISCO

**WHEN the news broke that the United Nations conference would be held at San Francisco, the Railway Express Agency, and especially its Air Express Division, immediately leaped to the task of organizing its facilities to meet an impending avalanche of emergency express traffic. Over a hundred years of experience in the express business told REA that once diplomats, newspapermen, Government officials, and visitors began crowding into the conference city, an unprecedented volume and variety of special shipments, all clamoring for high speed delivery, would start to helter-skelter through the San Francisco express office.**

Looking ahead to the coming emergency and seeking to do all possible to expedite traffic which might be vital to delegates harrassed with problems of world security, REA set up three express booths in the main lobby of the Veterans War Memorial Building. Experienced Agency representatives were assigned to man and supervise the handling of shipments in and out of the city.

The coordinated air-rail-truck facilities that link REA's 23,000 express offices over the nation were all placed on a trigger-timed basis. Air express trucks were stationed at the rear of the War Memorial Building, ready to whisk special shipments to the nearest airport for transfer to cargo-carrying planes.

The agency was right in its premonition. No sooner did the opening ceremonies get under way than a torrent of luggage, documents, newspapers, newsreel films, typewriters, etc., began flooding the express booths and mingled cries of "priority" and "air express" filled the air.

Transportation legends were made and transportation records broken.

Daily shipments of newsreels, taken of the historic sessions, were air expressed to film centers throughout the country for astonishingly rapid distribution. With a same-day deadline set on deliveries, films of the conference were air expressed to New York in sufficient time to allow for editing, cutting, and dubbing in of commentary before NBC's television station put them on the air the next day.

Four 15-minute television programs were broadcast in the first five days of the conference with thousands of feet of film air expressed daily.

Crucial labors of the Security Council committees beat time to the unceasing click of typewriter keys. Before many days, a serious shortage of typewriters had developed with consequent hampering of important technical work.

When it became clear that San Francisco had been drained of its available machines, a shipment of typewriters from the State Department in Washington was ordered with air express used for fastest delivery. One cargo of typewriters weighed 385 pounds and carried charges of $323.49—an insignificant cost for solving the immediate problem of the delegates.

Services, rendered by REA, ranged from same-day delivery of important documents to a foreign diplomat, to the less important use of an express office dater and stamp pad to register the purchase of the first $500 Seventh War Loan bond by State Secretary Edward R. Stettinius.

New York newspapers, including two of the largest morning dailies, which moved 200 and 500 copies of newspapers respectively by air every day, arrived in San Francisco on each day of issue.

Substantial rail express traffic of a diverse

SEND IT BY AIR—The Air Express Division of the Railway Express Division played a notable part at San Francisco. This scene presented itself at an express booth in the main lobby of the Veterans War Memorial Building, San Francisco. D. D. Barry, general agent for REA, is second from left.

nature also moved to and from the coastal city, personal luggage making up the greater part of the shipments.

Most of the airborne shipments went on a priority basis. Necessary papers were secured by shippers under an arrangement between the Air Priority Control of the Army Transport Command and the State Department.

While practically all cargo was of an emergency character, here and there amusing instances of "human interest shipping" kept cropping up. There was the case of the impatient reporter who insisted on getting his laundry cleaned and delivered sooner than the two-week minimum set by the overburdened San Francisco laundries. Resorting to air express, he had his "wash" flown to his home laundry in Westwood, New Jersey, and it was returned by air within seven days, beating the Frisco service by a full week.

As a gesture of hospitality to its foreign and domestic guests, the conference city made efforts to have Turkish, Russian, English, and popular American cigarettes sold at the tobacco stand in the War Memorial Building. Seizing this unusual opportunity, delegates began air expressing cigarettes back home to smoke-hungry friends, relatives and associates.

That the air express service provided by the agency had met the shipping emergency of San Francisco by anticipating the problems and acting to solve them with efficiency and dispatch can be seen by comments of prominent shippers as recorded in the registry book of REA. Among these personages are Emil Hurja, Government representative and former editor of *Pathfinder*; Thomas I. J. Wong, Chinese delegate; Jack S. Connolly, secretary of the Office of Inter-American Affairs; Major H. W. Peterson, responsible for priority issuance; and Brigadier General J. Pierce.

Other expressions of commendation were inscribed by members of Russian, French, Peruvian and Australian delegations.

From April 25 to May 9, an average of 51 air express shipments weighing 1,495 pounds were handled each working day at the express booths. Inbound traffice heavily outscored traffic going out with 419 shipments entering the city compared with 244 leaving and 17,678 pounds coming in against 1,751 going out.

## Welcome, Neighbor

AMERICAN Airlines struck a stirring note with the publication of a full-page advertisement upon the inauguration of the historic San Francisco Conference. Under the streamer, "Welcome, World Neighbors, to San Francisco," it said:

"Webster's New International Dictionary defines a neighbor as, 'One entitled as a fellow being to receive, and expected to render, kindness.'

"Because of the increasing use of the universal realm of air, the people of the world are becoming 'neighbors,' with attendant responsibilities and opportunities.

"Today, neighbors are but hours apart, where formerly they were separated by weeks and months.

"Today, neighbors are learning respect for each other's strength, and tolerance for each other's weakness, so that tomorrow they may live in peace with each other.

"Air transportation makes all people neighbors."

There were five versions of the same message on the single page: in English, French, Russian, Spanish, and Chinese.

## Economic Factors In Rate-Making

*(Continued from Page 54)*

portion of the expenses are invariable with distance, Mr. Lardner concluded:

**". . . a tariff graduated upon the principle of diminishing as the distance transported increases, must be the source of largely augmented profits, and by these means the gross receipts of a railway may be increased, while the average amount of the tariff may remain unaltered."**

The Interstate Commerce Commission has recognized the need for a tapered rate progression on the theory that terminal costs are largely invariable with distance and line-haul costs decrease with length of haul. It was thought that uniform progression would discriminate against long distance movements and restrict the free flow of traffic. In order that the air rate structure may reflect a proper evaluation of the invariability of terminal expenses with distance, it is necessary that a separation be made between line haul and terminal costs. A rate structure which does not take cognizance of the qualitative difference between these costs imposes an undue burden on long-haul traffic.

The Civil Aeronautics Act provides certain governing principles but does not prescribe the method to be followed in constructing rates. In observing these principles, the carrier must give proper consideration to economic factors which vitally affect the rate structure and which will, in a large measure, govern the future traffic volume and thereby advance both public and private welfare.

# CASE HISTORIES OF EXPRESS-BY-AIR

IN the shipbuilding and repair industry, among the jobs on which air express aided in keeping moving, was an emergency shipment to Baltimore by the Western Gear Company of Seattle of a special type of winch which weighed 2,000 pounds. The Navy had requested this for a ship which was scheduled to move in a convoy. The winch shipped via air express arrived in time for the convoy to depart on schedule with equipment needed for the invasion of Europe.

Another example of air express making it possible for a convoy to leave on time took place when the Diesel Engineering Company of Seattle was requested to furnish complete sets of main bearings for two ships in dry dock at Todd's Seattle repair yards. The ships were scheduled to sail in a convoy. After several tries the Diesel Company managed to locate enough parts in San Francisco and New York City to make up two complete sets of main bearings. They were sent air express, arrived within 24 hours, thereby allowing the two ships to sail in a convoy carrying materials needed for one of the South Pacific invasions.

The Double Seal Ring Company, of Fort Worth, Texas, recently shipped via air express 448 pounds of special equipment to the Canal Zone. This was installed on a crippled tanker allowing it to arrive on time at its destination with its precious cargo.

The General Electric Company rushed via air express from their Schenectady, New York, plant tanker propulsion motor coils weighing 1,142 pounds to the Kaiser Shipyards at Portland, Oregon, making it possible for a ship to be launched on the date set.

Aiding in speeding badly needed material to the front lines has been another job of air express. During the Ardenne offensive a critical need for mine detectors developed. The O. B. McClintock Company of Minneapolis, Minnesota, needed certain parts for this job, and they were shipped by the Detrola Corporation of Detroit. Air expressed in the afternoon, they arrived the next morning, thus enabling the McClintock Company to furnish the front lines almost immediately with the needed mine detectors.

During the African campaign B-17 bombers were grounded due to the difficulties experienced on the desert with sand. The Western Die Casting Company of Oakland, California, was called upon to furnish a certain part that would enable these planes to go into action. These parts were shipped air express across the country and then speeded to their final destination by the Air Transport Command.

An additional example of speeding material to the front lines is reported by the Firestone Tire and Rubber Company's plant at Atlanta, Georgia, which forwarded via air express a shipment of fire receptacles weighing 113 pounds to the ATC at Newark, New Jersey. This badly needed material was in action across the seas within four days.

Express-by-air came as a blessing in other ways, too. For example, the Vellumoid Company of Worcester, Massachusetts, received word from the Du Page Plastics Company, Glen Ridge, Illinois, that unless it received some special gaskets that operate on the hy-


**AIR CARGO INSURANCE**

MAIL • EXPRESS • FREIGHT

CARRIERS LIABILITY—SHIPPERS ALL RISK
ANYWHERE IN THE WORLD

**PARKER & CO.**

NEW YORK
60 E. 42nd STREET
MUrray Hill 2-7424

PHILADELPHIA
1616 WALNUT STREET
KINgsley 1200

*Specializing in aviation insurance for over 20 years*

SERVING SOUTHERN READERS — Stewardess Virginia Williams, Operations Manager George Cushing, George C. Biggers, and First Officer Ed H. Heimann (left to right) photographed a few minutes before the take-off of a Delta Air Lines plane with the first Air Express Edition of *The Atlanta Journal*.

draulic system which opens bomb-bay doors on B-29s production would have to stop. The gaskets were flown that night and saved a shutdown.

At the Atlanta, Georgia, plant of the Bell Aircraft Company, a large number of planes were ready for delivery to the Army with the exception of certain parts that were manufactured in Chicago by the Brad Foote Gear Works. The latter air expressed 44 boxes of the necessary parts weighing 1,487 pounds. As a result, Bell cut several days off the expected time of delivery.

Early last February, with but one day's supply of a badly needed type of corrugated hose on hand, the Boeing Aircraft plant at Seattle had the Goodyear Tire and Rubber Company of Akron, Ohio, ship via air express 156 pounds of this hose. The shipment arrived in time to prevent the halting of the production line.

The Electrical Products Company of Oakland, California, was able to complete a war contract with 45 minutes to spare because of the speed of air express. Working on a special contract calling for delicate instruments for military need, with a short-time allowance to complete it, the manufacturer ran into difficulties when halfway through the order. Special parts were shipped via air express by The Howard Manufacturing Company, of Council Bluffs, Iowa, and the contract was finished just under the wire.

The Heald Machine Company, Worcester, Massachusetts, on receiving word that one of its machines used by the Nash Kelvinator Company's Milwaukee plant had broken down flew the necessary repair part weighing 97½ pounds. It arrived in time to save serious loss of time in the production of airplane motors. The Pratt & Whitney plant at Kansas City, Missouri, was aided in much the same manner through the utilization of air shipping by the John Bath Company, of Worcester, Massachusetts.

## South is Benefited by Deep Slash in Air Express Rates On Newspapers and Magazines

Southern readers of newspapers published a few hundred miles distant will have them within a few hours after coming off the press as the result of new low rates announced by the Air Express Division of the Railway Express Agency.

Under the new rates, which went into effect on May 26, it is possible to fly 20 pounds of magazines and newspapers from New Orleans to Fort Worth for two dollars. Formerly the same shipment would have cost $3.54. The minimum charge of one dollar is being continued.

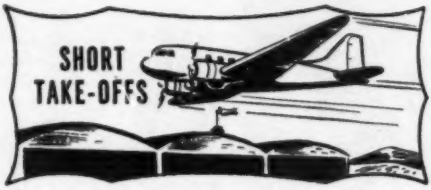
Air Express is routing its shipments of magazines and newspapers through Delta Air Lines. Earlier last month the first Air Express Edition of *The Atlanta Journal* was flown from its home city to Augusta and Savannah, Georgia. According to Paul Pate, Dal air cargo superintendent, available cargo space has now made it possible to handle regular air deliveries of *The Atlanta Journal* to the two cities on a daily basis.

George C. Biggers, executive vice-president and general manager of the paper, declared in a formal statement:

"This is the first of what we expect to become a network of air express routes delivering *The Journal* throughout the South when newsprint and air cargo space become plentiful."

Savannah readers, some 300 miles away from the plant of *The Journal*, were reported to have been amazed at seeing the Atlanta daily headlining the story of the Nazi surrender in Italy only two hours after it broke.

Two months ago, Sir Miles Thomas, vice-chairman of the Nuffield organization, predicted that London newspapers would soon be delivered by glider train for distances as far as 900 miles.




*(Trade Mark)*

New York's $71,000,000 Idlewild Airport, which has been called the greatest in the world, will begin operations about October 1.

Feederline and local service within the State of Oklahoma by Central Airlines, have been assured through a granted Certificate of Convenience and Necessity. Thirty-nine cities and towns in the State, with a population topping a million, will be served.

Small passenger airplanes, convertible into automobiles, may be developed within the next few years, according to a report released by a Senate sub-committee.

A helicopter landing field has been purchased adjoining an office building on Washington Street, West Newton, Masachusetts.

Seven minutes were shaved off the Moscow-Washington record when a *Liberator*, carrying W. Averell Harriman and Sir Archibald Clark Kerr, flew the distance in 49 hours and 20 minutes.

About 420 acres of tax-delinquent land are being taken over by Los Angeles for the expansion of the city's Inglewood Airport. Another 1,326 acres of condemned land are being sought.

Philadelphia is rolling up its sleeves and tackling the problem of enlarging its Municipal Airport, which was recently renamed the Philadelphia Southwest Airport. Existing runways will be extended to 6,500 feet if engineers employed by the Philadelphia Chamber of Commerce and Board of Trade have their way.

Russia means to keep abreast of progress in civil aviation. Her latest are several new passenger planes, including a single-engined flying automobile designed for a pilot and three passengers. It was designed by the famous Alexander Sergevich Yakovlev, designer of the *Yak* fighter.

A new type horsepower indicator which will give immediate warning in the event of power plant failure has been invented by A. J. Badelone and O. W. Ehlers for Consolidated Vultee.

Continental Air Lines' new schedules have stepped up the company's mileage from 263,400 miles per month, to 368,480 miles per month—an increase of 39 percent.

For the sake of brevity and simplicity, Westinghouse Electric and Manufacturing Company has changed its name to the Westinghouse Electric Corporation.

It is contended by *Air Policy*, a newly-published booklet issued by the National Association of Motor Bus Operators, that unless intercity bus lines are permitted helicopters for local air service after the war, the nation's smaller communities will continue to be deprived of the benefits of air transportation. More than 60 intercity bus lines have filed applications with the CAB to provide local air service by means of helicopter or similar aircraft.

Caracas now has the only downtown airline terminal in the Western Hemisphere, outside of New York City—Edificio Metropole. It was obtained last month by PAA.

Participating in a forum broadcast over WMCA, New York, Alfred Marchev, president of Republic Aviation, C. C. Thompson, vice president of United Airlines, Dr. N. L. Engelhardt, Jr., director of Air-Age Education Research, and Austin J. Tobin, executive director of the Port of New York Authority, predicted that the New York area will stand foremost in postwar aviation.

The United States used airplanes to bring 7,133,000 pounds of strategic war materials into this country last year. This was an increase of 166,000 pounds of air cargo imports of similar materials in the previous year.

Anticipating heavier traffic between Seattle and Alaska this summer, PAA announced last month the operation of 14 round trips each week.

American Airlines, operating under contract to the ATC, shattered all records for military flight operations two months ago. AA made 457 Atlantic crossings. The former high for all airlines was 450.

Jet propulsion aircraft engines now are being produced for the Navy by the General Electric Company. For reasons of military security, no further official announcement concerning the Navy program for use of the General Electric jet airplane power units can be made.

Officers of Laister-Kauffman Aircraft of St. Louis have announced that final steps have been completed in the acquisition of Bowlus Sale Planes, Inc., of Los Angeles.

An aeronautical curiculum has been introduced at Fairleigh-Dickinson Junior College, Rutherford, New York.

The memory of Amy Johnson, famous British pilot as well as an aircraft engineer of note, will be perpetuated by the annual award of a new scholarship by the Society of British Aircraft Construction, which is cooperating with the Women Engineers Society.

Fifteen thousand white mice, needed quickly for use in the development of a new tropical disease serum, were recently flown to a laboratory across the continent from California in a C-47. This was the first group of 19 000 white mice which will be transported by C-47s.

The Aerodrome Owners' Association of England added its sharp protest to Prime Minister Winston Churchill and to Minister of Civil Aviation Lord Swinton to the Government's proposal to maintain its monopoly in British civil aviation.

*World Air Routes*, published by Air-Age Educational Research, may be obtained through Rand McNally & Company, in both the small and large sizes. The wall size (42 x 50 inches), which sells for one dollar each, is printed in five colors, based on a United States-centered azimuthal equidistant projection, and shows the global air routes suggested by the CAB for United States flag lines. Completing the map are a chronological history of the progress of aviation, a time distance chart, and an explanatory essay entitled, *Map Facts*.

PAA reports a waiting list of approximately 2,500 passengers for transatlantic flights, built up during the past four years.

## AIR TRANSPORTATION Congratulates

**ERIC JOHNSTON,** president of the United States Chamber of Commerce, who has been elected a director of United Air Lines.

Mr. Johnston, who has gained international attention for his progressive views on business, industrial and economic affairs, takes the place on UAL's board of Sumner Sewall, now president of American Export Airlines.

He is president of the Brown - Johnston Company, the Columbia Electric Company, the Columbia Electrical Instrument Company, and the Washington Brick & Lime Company—all of Spokane, Washington. He has been president of the United States Chamber of commerce since 1942.

UAL's new director is a member of the Economic Policy Committee of the State Department as well as of the War Mobilization and Reconversion Board. He also has held important posts with the Inter-American Economic Development Committee, the Economic Stabilization Board and the War Manpower Commission. Mr. Johnston was mentioned as a possible Republican candidate before the 1944 Presidential nominations. His home is in Spokane.

---

**ALONZO PETTEYS,** vice-president and director of the Farmers' State bank of Brush, Colo., named a director of Northwest Airlines. Born in Wilcox, Nebraska, Mr. Petteys was graduated from Grinnell College, Iowa, in the class of 1911. He is a director of the Farmers' State Bank at Fort Morgan, Colo.; of the Denver Tramway Company; and of the Denver Dry Goods Company.

**SUMNER SEWALL,** former Governor of Maine, who succeeds W. H. Coverdale as president and director of American Export Airlines.

Mr. Sewall has long been active in aviation. As a fighter pilot in World War I, he earned rating as an American ace, and was twice awarded the American Distinguished Service Cross as well as the French Legion of Honor and Croix de Guerre, and the Belgian Order of the Crown. For the past 11 years he served as a director of United Air Lines, a post he recently resigned. Seventeen years ago he served as traffic manager of Colonial Airlines and subsequently was general passenger traffic manager of the system which became American Airlines.

A native of Bath, Maine, where he still resides with his wife and four children, the new airline president is a member of one of that State's oldest and most distinguished families.

---

**MAJOR EDWARD M. STURHAHN,** appointed executive assistant to T. P. Wright, Administrator of Civil Aeronautics.

Major Sturhahn, upon the request of Secretary Henry A. Wallace, has been released from the Aircraft Scheduling Unit of the Army Air Force, by the Secretary of War to assume his new duties.

As president and general manager of Dixie Flying Service in 1929, Major Sturhahn was one of the pioneers in scheduled airline operation, inaugurating the first scheduled airline to carrp passengers south out of Washington. Major Sturhahn became purchasing agent for Eastern Airlines at Atlanta, Georgia, in 1933 and, for the past three years, has been Recorder and Assistant Administrator of the Aircraft Scheduling Unit, first as a War Production Board employee, then as a Major in the Army Air Force.

**MAJOR LESLIE A. BRYAN** of Syracuse, New York, who has taken over the important post of director of the new Bureau of Aviation in the New York State Department of Commerce.

A native of Bath, New York, Major Bryan "grew up in the middle of the early experiments of Glenn H. Curtiss and the Thomas brothers, who were working in Hammondsport and Bath." He saw his first flight in 1908 made by Curtiss in the latter's *June Bug*. He also witnessed the trial trips of the first transatlantic aircraft in America, as well as the flight of the so-called *Langley Folly* in 1913 "after it had been brought out of the Smithsonian Institute and re-rigged somewhat."

Major Bryan served in the First World War. In 1933 he initiated one of the early college courses in aviation at Syracuse University. After acting as coordinator for the old CPT and WTS programs, he became president of the Seneca Flying School, Syracuse, the largest Army indoctrination school in the United States. Last year he was instrumental, along with several others, in forming the New York State Aviation Council. Major Bryan pilots a *Taylorcraft*.

---

**RAYMOND G. LOCHIEL,** newly-elected vice-president of Pennsylvania-Central Airlines; and **GEORGE W. MASON,** and **DAVID L. FRAWLEY,** respectively president of the Nash-Kelvinator Corporation and vice-president of the Barnsdall Oil Company of Pittsburgh, now members of PCA's board of directors.

Raymond G. Lochiel

Mr. Lochiel, a graduate of Temple University's School of Commerce, specialized in aviation accounting prior to his appointment as comptroller of Pennsylvania Airlines in 1932. A year later he was elected assistant secretary and treasurer. When PCA was incorporated in 1936, he was elected treasurer, since serving in that capacity. He is a member of the Airline Finance and Accounting Conference, and an executive in the National Office Management Association.

George W. Mason

The new members of PCA's board of directors have been prominent for several years in industrial and financial circles. Mr. Mason served as president and general manager of the Kelvinator Corporation from 1928 until that company was merged with the Nash Motors Company in 1936, remaining in those positions since the merger. He started his business career with the Studebaker Corporation, his first job after graduating from the University of Michigan in 1913. He went to New York to become the director of business extension of the Irving National Bank in 1919. Returning to the automotive field in 1921, Mr. Mason became works manager of the Chrysler Corporation, leaving after five years to become vice-president of Copeland Products, Inc. The following year he was elected president. Mr. Mason is a member of the board of directors of several large corporations, is treasurer of the board of the Automobile Manufacturers Association, and is regional vice-president of the National Association of Manufacturers.

David L. Frawley

Mr. Frawley, a tax authority, is a member of the board of directors of several important oil and steel corporations of Pittsburgh and Oklahoma. He left Oklahoma as a young man to serve as secretary to Senator Gore of Oklahoma, in 1913, and subsequently was employed by the Federal Government as an income tax agent. He left Government service to supervise tax departments for several companies, prior to his career with the Barnsdall Oil Company.

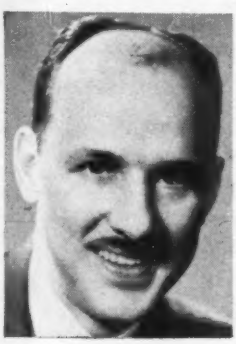
**BOWMAN R. OTTO,** president of the Otto Aviation Corporation, elected president of the newly formed New Jersey Aviation Trades Association.

With its membership made up of airport service operators in the State of New Jersey, the association was formed to set up standards of aviation service to increase the safety of private flying and to sponsor greater public interest in all aviation activities.

Elected vice president of the organization was O. P. "Ted" Hebert of Safair, Inc., Bendix; Walter R. Laudenslager, owner of the airport at Red Bank, as secretary; and Sandford W. Blackiston of Bridgeport, as treasurer. George Lambros, Jr., operator of the seaplane base at Ridgefield Park, and Joseph Schwanda of Hackettstown, with the officers, comprise the Board of Trustees. State headquarters for the New Jersey Aviation Trades Association have been set up at 258 Liberty Street, Bloomfield, New Jersey.

---

**HAROLD D. KOONTZ,** transportation analyst, appointed co-ordinator of planning for Transcontinental & Western Air.



Mr. Koontz joined TWA after serving as assistant to the vice president in charge of research of the Association of American Railroads. Prior to that position, he was in charge of transportation for the War Production Board's Office of Civilian Requirements and previously had acted as aircraft cost consultant for the Office of Price Administration.

A graduate of Oberlin College, Mr. Koontz received a Business Administration degree from Northwestern University and engaged in special studies at Yale University where he held the Stratcona Fellowship in transportation. He served as assistant professor of transportation at several universities.

**J. KIRK BALDWIN,** appointed airport consultant to the Aviation Section, New York Board of Trade, by Chairman John F. Budd.

A former resident of Cheyenne and Caspar, Wyoming, Mr. Baldwin is now living in New York. He is general manager of *Airports Directory*, and until recently he was chief of airports management for the Civil Aeronautics Administration. In the past he served as State treasurer and director of the Wyoming State Aeronautics commission.

---

**J. D. CRANE, THOMAS PREVOST, R. P. FOREMAN,** and **VINCENT McCOMB** elevated to new important posts by the National Airlines system.

Mr. Crane has been promoted to vice president in charge of maintenance and engineering. Mr. Prevost, NAL's Eastern Region traffic manager, now holds the position of assistant vice president. Mr. Foreman, secretary and executive assistant, has been given a directorship in the company. Formerly with American Airlines with which he served as a traffic representative in New York City, Mr. McComb takes over the city traffic manager's job for NAL in the same city.

---

**B. A. "BUD" GILLIES,** former assistant to President T. Claude Ryan, elected a vice president of the Ryan Aeronautical Company.

Mr. Gillies will have charge of the manufacturing and engineering operations of the company. He has been a national figure in the aircraft industry for 17 years. At the age of 23 he was general manager of the Grover Loening Aircraft Company, and at 29 became vice president of the Grumman Aircraft Engineering Corporation. He held the latter position until this year. Mr. Gillies succeeds O. L. Woodson, who resigned to go into business for himself.

**JOHN H. PAYNE,** for more than 20 years associated with the export activities of private and Governmental agencies, appointed to the staff of the Aeronautical Chamber of Commerce of America. Formerly assistant to the president of the Sperry Gyroscope Company, he will coordinate the program for the Chamber's export activities.

Prior to his association with Sperry, Mr. Payne was with the United States Government for six years. From 1937 to 1941 he was chief of the Electrical Division of the Bureau of Foreign and Domestic Commerce, and while in this position served as technical advisor to the United States delegation to the International Telecommunications Conference in Cairo in 1938. From 1941 to 1943 he was radio broadcast advisor to the Coordinator of Interamerican Affairs in New York. For 12 years prior to his Government association Mr. Payne was a member of the executive staff of the Westinghouse Electrical International Company, serving successively as manager of its European Department and as manager of the Power and Distribution Department.

---

**ALEX SMITH, FORD STUDEBAKER, DAVID WATSON, RAYMOND LACLERGUE,** and **ROBERT T. WILLIAMS,** newly elected office-holders in Hawaiian Airlines.

Mr. Smith, now vice president and secretary, is Glasgow-born in which city he attended the university. He is a member of the Institute of Accountants and Actuaries of Scotland. From December, 1941, to June, 1943, he served as assistant director of materials and supplies in the office of the military governor. Mr. Smith is a commissioner of public instruction from Oahu.

With HAL as an engineering consultant since January of last year, Mr. Studebaker becomes vice president in charge of operations and development. Before joining Hawaiian, he was a vice president of the Rubber Development Corporation's aviation division in charge of the Amazon Basin Airlines, and assistant operations manager for American Export Airlines.

Mr. Watson takes over the post of treasurer after serving as assistant treasurer since 1942. Like Mr. Smith, he attended the University of Glasgow and is a member of the same society.

Raised to the capacity of assistant treasurer following service as assistant accountant, Mr. Laclergue now operates in Mr. Watson's former position. He is a Californian and a graduate of San Jose College.

HAL's newest director, Mr. Williams, is president of the Williams Equipment Company.

---

**GLEN D. WOODMANSEE,** who has just taken over the post of general counsel of the Civil Aeronautics Administration.

A native of Ogden, Utah, Mr. Woodmansee is an alumnus of the University of Utah. He came to the capital 12 years ago to serve in the solicitor's office of the Commerce Department. Since the resignation of Webb Shadel last November, Mr. Woodmansee has been acting gentral counsel of the CAA. The official announcement of his new post was made last month.

---

## AEROVIAS BRANIFF:

**Colonel Richard W. Pears,** recently of the United States Army Air Forces, appointed chief pilot. He was formerly chief pilot of Braniff Airways.

## BENDIX AVIATION:

**George Myrick,** one-time administrative consultant to the CAA, now manager of the Radio Division's personal aviation sales . . . **Charles F. Luscombe,** former domestic and foreign field service representative for the division, named sales engineer for personal plane radio . . . **Vernon Moore,** who did the original design work on the Bendix radio compass, assigned to engineering development.

## BRANIFF AIRWAYS:

**Horace Bolding,** appointed to the post of purchasing agent . . . **Kenneth B. Loeffler,** now station manager of Braniff in Tulsa, Oklahoma.

## COLONIAL:

Elected officers for the ensuing year: **Sigmund Janas,** president; **E. S. Ridley,** vice president; **Branch T. Dykes,** vice president in charge of operations; **Alfred M. Hudson,**

vice president-traffic; **J. V. Flanagan,** treasurer; **K. Hamilton,** secretary; **Carl L. Anthony,** assistant secretary.

## DELTA:

**Manley E. Beard,** former district manager at Shreveport, Louisiana, promoted to a new district with headquarters at the St. Charles Hotel, New Orleans . . . Promoted traffic personnel: **Ross Ferrier, Jr., Mrs. Beverley Raggio, Virginia Nelson, Frances Young,** and **William Mercer Dye.**

## FAIRCHILD CAMERA:

**Oliver F. Johnson,** who has been with the OPA as its executive officer for field operations, now doing market research and postwar sales and distribution planning for Fairchild.

## MID-CONTINENT:

**Thomas Fortune Ryan III,** elected to the Board of Directors. He is now serving with the armed forces in the Pacific area . . . **Donald W. Doherty,** formerly superintendent of sales for the Diamond Match Company, who has become traffic representative in the Minneapolis office.

## NATIONAL:

**Murray T. Jackson,** appointed assistant district traffic manager with headquarters in Miami . . . **Helen Borg,** who joined NAL six years ago, elevated to the position of city traffic manager at Miami . . . **Walter Pearce,** new station manager at Sarasota-Bradenton, Florida, succeeding **H. S. Parker, Jr.,** who has been assigned to the Air Cargo Department.

## NORTHWEST:

Three men who have joined NWA's new traffic staff at Detroit: **Donald Oliver, Oscar Mardell,** and **Morris Bakken.**

## PAN AMERICAN:

**John E. Yerxa,** named regional manager for the New England area, with headquarters at 24 Federal Street, Boston.

## PENNSYLVANIA-CENTRAL:

**Leigh R. Murphy,** veteran pilot, now supervisor of operations in the New York district . . . **William D. Ord,** one-time supervisor of reservations and ticketing, who takes over the job of regional ground operations supervisor for the Eastern Region . . . **Lawrence Frost, Will Albers, Carl Finlayson, William J. Bowden, K. C. Sorby, C. H. Taylor,** and **V. K. Stephens**—all shifted to new stations as a result of the recent inauguration of new flights and services.

## TACA:

Four new directors: **Herbert A. May,** vice president of the Union Switch and Signal Company, Swissvale, Pennsylvania; **Frederick M. Peyser,** partner in the Wall Street firm of Hallgarten and Company; **Webster B. Todd,** chairman of the board of Todd and Brown Engineering Corporation, New York; and **John M. Lockhart,** executive vice president of TACA . . . **Harry Van der Gaast,** appointed assistant general purchasing agent.

## UNITED AIRCRAFT:

**John J. Hospers** and **William H. McCarthy,** both with the Chance Vought Aircraft Division, advanced respectively to sales manager and field service manager . . . **Graham Reid** takes over the job of acting purchasing manager.

## UNITED AIR LINES:

All members of the **Cheyenne modification center** which has been awarded an Army-Navy E . . . **Lylas Kay,** named dietician at UAL's Chicago headquarters . . . **S. P. "Seth" Parker,** appointed station manager at Detroit . . . **S. M. Hadden,** who takes over the Des Moines station managership . . . **Henry K. Vieman,** elevated to the position of station manager at Moline.

## MISCELLANEOUS:

**W. R. Engstrom,** vice president of The Austin Company, who now heads the newly formed Austin Aviation Division . . . **W. S. Farren,** director of the Royal Aircraft Establishment, Farnborough, England, and **B. N. Wallis,** chief of research and development for the Vickers-Armstrongs Aircraft Section, elected to the Royal Society . . . **A. J. Klose,** who has designed combat planes for Northrup, Avion, and Vultee, now with G. M. Giannini and Company, Pasadena, California, holding down the posts of vice presidents and chief engineer . . . **Victor E. Semrau,** named secretary-treasurer and controller of the Pacific Airmotive Corporation . . . **Dr. George W. Lewis,** director of the National Advisory Committee for Aeronautics, elected to membership in the National Academy of Sciences . . . **A. M. Andrews,** veteran war pilot, who has joined the engineering staff of the Briggs Clarifier Company of Washington, D. C. He will concentrate on commercial airline service . . . **Brigadier General Thomas Hardin,** responsible for directing the flight of supplies over the Hump, named commanding general of the Central Pacific Wing, ATC . . . **J. R. Yarrow,** airport turf engineer formerly with the CAA, who has joined Airways Engineering Cousultants, Washington, D. C. He is in charge of the company's development program for airports and airparks.

(*Trade Mark*)

## AIR EXPRESS

An increase of 19.9 percent in the number of air express shipments handled at LaGuardia Field during the first quarter of 1945 over the same period 1944 has been reported by the Air Express Division of Railway Express Agency.

Air Express shipments forwarded and received at the field during the first three-month period totaled 194,893 compared with 162,430 for 1944. A 41.7 percent gain in gross revenue for the quarter was registered over 1944 with $1,043,441 as the total reported. Figures for March showed a jump of 18.6 percent in number of shipments handled at the field over the same month last year, while gross revenue registered a 41.8 percent increase.

## BRANIFF

Braniff Airways planes flew 635,500 more scheduled miles and carried 28,921 more revenue passengers during the first three months of 1945 than in the same period in the prior year as a result of the purchase of additional planes from the Government. A total of 27,847,988 passenger miles were flown in the first quarter of this year as compared to 16,783,272 in the same period of 1944.

The report points out that Braniff Airways still has five remaining air planes in process of or awaiting conversion from military to commercial airliners. The completion of the conversion of these planes will permit the addition of more schedules on routes now in service, as well as the inauguration of service on the Oklahoma City-Memphis route granted Braniff by the Civil Aeronautics Board last November.

## COLONIAL

Announcement has been made of the results of Colonial Airlines' operations for the month of April, 1945, in which 5,938 passengers were carried, an increase of 8½ percent over the preceding month and an increase of 72 percent for the same period of 1944. Mail and Express figures were similarly increased. These figures reflect the return of equipment to CA from the United States Government.

## DELTA

Revenue passenger-miles for the first third of this year totalled 28,558,587, an increase of 66 percent beyond Delta's last year's January-April figure of 17,223,769. Mail pound-miles increased 42 percent, mounting to 873,803,086 for the first third of this year, as contrasted with 613,519,010 in the same period last year. Express pound-miles increased 43 percent, being 160,171,336 this year against 112,529,143 for the first third of last year.

## EASTERN

The net profit of Eastern Air Lines, for the first quarter of 1945 increased 150 percent compared with the same period of 1944, according to an announcement by Captain Eddie Rickenbacker, president and general manager.

After providing $1,550,000 for Federal income and excess profits taxes, EAL had a net profit of $446,091.41, or 76 cents per share. This figure compares with a net profit of $178,520.26, or 30 cents per share, in the first three months of 1944.

Operating revenues of the company increased 54 percent to $5,872,929.46, while the expanding fleet of planes flew 5,729,626 revenue miles, an increase of 64 percent over 1944. Operating expenses increased $1,006,603.14, but the per revenue mile expense was reduced 17 per cent to 68 cents.

In the quarter covered by this report the company's planes carried 172,000 revenue passengers, an increase of 82,000 over 1944; and 94,323,361 revenue passenger miles were flown, compared with 53,607,665 last year. Mail carried increased 40 percent to 5,342,600 pounds.

## HAWAIIAN

Hawaiian Airplanes reported increases in passenger and cargo traffic during the 12 months of 1944, but showed a 15 percent decrease in air mail poundage.

Plane miles flown last year were 971,613, an increase of 5.05 percent; passengers carried, 110,618, an increase of 2.32 percent; passenger revenue, $1,276,146, an increase of 2.75 percent; and the passenger load factor 93.9 percent, an increase of 0.3 percent. Air mail poundage and air mail revenue respectively dropped 15.52 percent and 33.26 percent; while express-freight poundage and express-freight revenue respectively rose 27.38 percent and 25.99 percent.

## MID-CONTINENT

The operating revenue of Mid-Continent Airlines for March was $205,120.06—an increase of about 55 percent as compared with March, 1944. The company's reports indicate a net profit of $2,334.49 as compared with a net profit of $5,394.41 for the same month last year.

Marking a record expansion in cargo operations mail ton-miles carried by MCA increased 25.4 percent in March while express volume was up 161 percent over a year ago. Estimated mail ton-miles totaled 22,699 as compared with 18,100 in March, 1944. MCA express ton-miles totaled approximately 5,495 for the past month, and 2,105 a year ago.

## NATIONAL

Jacksonville, Florida had a 99.43 percent load factor into New York City during the month of April. This was the highest of any city along the NAL route.

National flew a total of 5,884,487 revenue passenger miles in April, this being an increase of 99.82 percent over revenue passenger miles flown in April, 1944. The load factor for the entire line was 91.40 percent in comparison with 86.30 percent for April, 1944. Revenue miles flown showed an increase of 92.32 percent; and 12,082 revenue passengers were carried in April, 1945 in comparison with the 9,543 in the corresponding month of last year.

## NORTHWEST

NWA carried more revenue passengers and flew them more revenue passenger miles during March than during any corresponding month in the history of the company. The totals were 21,297 revenue passenger miles.

This was 4,281 more passengers than the 17,016 carried in February, and 2,942,364 more passenger miles than the 11,100,495 flown that month. It ran far ahead of March, 1944—an increase of 12,068 over the 9,229 passengers carried during the month a year ago, and an increase of 7,676,889 over the 6,365,970 passenger-mile total a year ago.

April statistics showed NWA transporting 183,375 pounds of express, an increase of some 30 tons over the same period last year. Pound-miles reached 111,238,845.

## PAN AMERICAN

Passenger and freight traffic of Pan American World Airways' Latin American Division soared to new records in the first quarter of 1945 over the same three months in 1944.

Miles flown in revenue service totaled 4,572, 683, an increase of 23 percent over the 1944 quarterly total of 3,703,724, and passenger-miles flown rose from 53,164,723 to 65,308,413. Passengers totaled 73,047 as against 58,605, an increase of 14,442, or nearly 5,000 a month, while cargo was up from 6,210,048 pounds in 1944 to 7,614,320 pounds.

## TACA

TACA Airways System, operating airlines in Central and South America, has completed arrangements of new financing in the amount of $1,410,000. This financing is in the form of privately issued short term notes convertible to TACA common stock, according to Treasurer Erle Constable.

The notes issued bear interest at four percent, and were purchased principally by present stockholders of TACA, including TWA, Pennroad Corporation, Hallgarten & Company, and E. W. Clark & Company.

## UNITED AIR LINES

In the first three months of this year, United Airlines flew 114,015,773 revenue passenger-miles for a gain of 25 percent over the 90,995,471 flown in the first quarter of 1944; 5,500,844 mail ton-miles for a gain of 48 percent over the 3,713,026 of a year ago; 1,199,278 express ton-miles, a gain of 32 percent over last year's 907,502; and 8,349,021 revenue plane-miles, a gain of 38 percent over the 6,062,330 of 1944's first quarter.

## UNITED AIRCRAFT

Shipments of United Aircraft Corporation for the quarter ended March 31, 1945, amounted to $165,516,133. Net income was $3,547,781, which is equivalent to $1.21 per share of common stock on 2,656,701 shares outstanding, after provision for dividends to that date on preferred stock.


**THE ABC OF FOREIGN TRADERS**

**AIR TRANSPORTATION**

America's most important monthly aviation magazine devoted to Air Commerce, Air Cargo and Air Travel . . . $5.00 per year.

**BULLETIN (AMERICAN IMPORT & EXPORT)**

A monthly magazine supplementing the annual CUSTOM HOUSE GUIDE, complete in every detail . . . $5.00 per year.

**CUSTOM HOUSE GUIDE**

The 85th annual Encyclopedia for Foreign Traders just off the press. *"Seven volumes in One"*—1,520 pages of valuable information . . . $20.00 plus postage.

**Combination Offer—ALL FOR $20—*plus postage***

**10 BRIDGE STREET NEW YORK 4, N.Y.**

*Not a dream, but already ordered for postwar use by the Pan American World Airways, these giant Consolidated Vultee transport airplanes will streak from New York to London in 9 hours.*

## The Plane of Tomorrow

will carry tons instead of pounds, take hours instead of days. Whenever speed is a consideration, cargo will go by air.

Pioneers in all forms of transportation insurance since the days of "Clipper Ships", McGee has the proper solution to your air cargo coverage problem. Let us assist you through your agent or broker.

AIR CARGO *Insurance*

# Wm. H. McGee & Co., Inc.

*Underwriters of Everything in Transit*

**111 John Street** **New York City**

CHICAGO LOS ANGELES ATLANTA BALTIMORE TORONTO SAN FRANCISCO